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W E E K L Y R E P O R T S

Of The Division Of  
WESTERN IRRIGATION AGRICULTURE  
Bureau of Plant Industry  
United States Department of Agriculture

(Not for publication without the prior consent of this Division.)

Vol. XXXVII

January 5 and 12, 1935

No. 1

Newlands

The average maximum temperature for the two-week period ending January 12 was 44.1, with a maximum of 50 on January 8; the average minimum was 21.5, with a minimum of 12° on January 3. The mean temperature was 32.8°. The wind movement averaged 2.54 miles per hour. There was 0.53 of an inch of precipitation.

A great deal of snow has fallen on the Sierra Nevada Mountains during the past three weeks, a depth of 117 inches being reported on the Summit Pass. This is about twice the normal amount at this time of the year. The greater part of the snow usually comes during February. It is from these mountains that the Newlands project obtains its supply of water for irrigation purposes.

The land leveling project at this station has about come to an end. Two men are working 8 horses at the present time. This will continue under the F.E.R.A. until January 24, when all the funds advanced by this organization will be spent; then the work will be carried on with station labor. In the spring it is planned to employ an expert "finisher" to give the final touches to the work. Then, if funds are available, the entire area of 30 acres will be seeded.

The rebuilding of the dairy unit, recently destroyed by fire, will be completed in about ten days. This has been handled as an F.E.R.A. project. The new dairy barn has concrete floors and mangers and a corrugated iron roof. The hay barn and granary also have concrete floors and iron roofing. The dairy barn has stanchions for 36 cows, but the present herd comprises 25 cows. This allows room for expansion.

E. W. Knight.

Prosser

The temperatures for the week ending January 5 were as follows: Maximum 48, mean maximum 45.7, minimum 25, mean minimum 28.5, and the greatest daily range 23°.

The temperatures for the week ending January 12 were as follows: Maximum 47, mean maximum 38.7, minimum 25, mean minimum 29.7, and the greatest daily range 15°. The mean wind velocity was 2.47 miles per hour. A trace of snow fell during the week.

A comparison of top prices for farm produce on January 12, 1934 and 1935 shows increases for steers, hogs, lambs, wheat, oats, barley, eggs, and butterfat in 1935; while hay, potatoes, onions, and hops were bringing considerably more a year ago than they are now.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending January 5 was 46°, with a maximum of 53; the average minimum was 17, with a minimum of 11°. The average wind movement was 9.2 miles per hour. Unprotected fields sustained considerable damage on the 1st, 2d, and 3d when the wind movement averaged 16 miles per hour. There was no precipitation.

The clean-up program on the station has been continued. The old potato cellar has been filled in, and the old concrete wall has been removed from the basement of the mess house. The drain pipe from the milk house was taken up and lowered to insure better drainage and less freezing. The burning of weeds was continued. The walls in the office building are being washed.

The Pathfinder reservoir contained only 30,140 acre-feet of water at the close of 1934, with an inflow during December of 15,840 acre-feet and an outflow of 4,620 acre-feet. The Guernsey reservoir held 22,400 acre feet, with an inflow of 10,035 acre-feet and an outflow of 5,165 acre-feet during December.

The Livestock Market News Service of the U. S. Department of Agriculture was resumed this week in charge of Elmer T. Forsling, continuing the service given the livestock interests of this area last winter. There will be four market broadcasts from the local station daily as well as daily reports in local papers.

The North Platte Valley Poultry Marketing Association held its annual meeting in Torrington with an attendance of over a hundred members. J. A. Stephenson, of Torrington, was reelected President, and H. V. Anderson, of Henry, was reelected Secretary. A proposal for the financing of the purchase of poult's was turned down, but the Secretary was authorized to purchase feed to be sold later to the members for cash, and two car-loads have already been contracted. Approximately 17 carloads of turkeys have been shipped this year, for which some \$65,000 was received, or about \$22,500 more than the growers were paid last year.

A well attended meeting of potato growers voted to support an action in the State legislature to provide compulsory inspection of Nebraska potatoes, in accordance with Government standards of grading.

Butterfat is selling for 28 cents and eggs for 22 cents. Fat lambs are bringing \$9.00 at Omaha.

The average maximum temperature for the week ending January 12 was 50, with a maximum of 57; the average minimum was 20, with a minimum of 1°. The wind movement averaged 6.8 miles per hour. There was no precipitation.

Labor furnished by the F.E.R.A. has either already finished or is now performing the following tasks: Painted the supply tank enclosures, washed the walls of the office building, cleaned and painted floors in the bunkhouse, built a concrete drive in the new potato cellar, burned weeds, cleaned the windbreaks and the old dump heap, and hauled ashes and refuse to fill a bad wash-out on the Walker place.

Water conservation officials of the F.E.R.A. have halted the taking of applications for the erection of dams in this area. Although very little interest was shown in this work at the start, the office has been flooded with applications since the completion of the first dam on the Wildcat Game Preserve. A number of dams are under construction at present and eight or more have been completed in Scotts Bluff and Banner counties.

Scotts Bluff (cont'd)

At its first annual meeting the Scottsbluff Production Credit Association reported that during its first nine months of operation loans amounting to \$340,000 were made, of which \$100,000 have been repaid. These loans were made to 270 farmers and stockmen in Sioux, Banner, Kimball, Cheyenne, Morrill, Garden, and Scotts Bluff counties. These counties embrace all of the territory that is served by this association.

Lionel Harris.

Umatilla

Weather conditions for the week ending December 22:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
58	30	45	0.27	5.9

Fencing the half-acre pasture plots in the area above the feed canal was completed during the week. Miscellaneous work consisted of hauling manure and cleaning up around the buildings.

The Superintendent spent most of the week at Corvallis at the annual conference, which was attended by all field station superintendents, extension workers, the home station staff, and college workers in agriculture.

Weather conditions during the week ending December 29:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
52	26	41	0.17	8.5

A milking machine was installed during the week. The station herd now consists of 22 cows giving milk. They are on the same test as last year, ascertaining production with hay alone and production with hay and medium concentrate ration.

The rye sown last September to prevent wind erosion in the transplanted pyrethrum was removed.

Weather conditions for the week ending January 5:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
49	25	39	0.10	4.15

The year 1934 was the driest in 23 years, the total precipitation being 5.21 inches. The next driest year was 1932, with a total precipitation of 5.33 inches. The normal precipitation is 8.13 inches. The autumn precipitation for 1934 was 1.5 inches below that of 1933.

There are conflicting reports on snow conditions in the mountains on the upper Umatilla River watershed, some stating that conditions are better than a year ago and others that they are about the same. The feed canal which supplies the Umatilla reservoir has been running continuously since early in November, with a head slightly above the normal high water mark here at the station. The amount of water stored now is approximately a third greater than a year ago.

Umatilla (cont'd)

Two days were spent with the District Supervisor of the Rural Rehabilitation Corporation, examining land suitable for the relocation of distressed farmers. The plan is to obtain approximately a thousand acres, but all of it will not be used for rehabilitation immediately. Both the Westland project and the Stanfield project have such areas available. Final decision as to which land the corporation will purchase will probably be based on a report by representatives of the Oregon Agricultural College.

The crop situation on the West Extension District, which includes the land surrounding Irrigon and Boardman, was presented to the Morrow County Pomona Grange. The remarks were based largely on the crop census, which showed that in 1934 the return per acre of alfalfa was practically equal to that of 1926, which was the year the district took over the project, and the first for which separate crop census is available. The return from all crops during that period declined \$11 per acre. The station results bearing on the crop program were presented.

H. K. Dean.

## M I S C E L L A N E O U S

"Agricultural Investigations at the Belle Fourche (S. Dak.) Field Station, 1926-32," by Beyer June, L. A. Hurst, and Albert Osenbrug, has recently been issued as Technical Bulletin No. 454 of the Department.

"Cotton Root Rot as Affected by Crop Rotation and Tillage at San Antonio, Tex.," by George T. Ratliffe, has recently been published as Technical Bulletin No. 436 of the Department.

An illustrated article entitled "Pasturing Alfalfa with Cattle and Sheep in the Western United States," by Stephen H. Hastings, has been mimeographed and a limited supply is available for distribution.

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Vol. XXXVII

January 19 and 26, 1935

No. 2

Huntley

The maximum temperature during the two-week period ending January 26 was 61 and the minimum -26°. The precipitation amounted to 0.45 inch. There was a light fall of snow and several days of subzero temperatures.

So far the winter precipitation has been short in the entire Yellowstone watershed, and it is feared there will be a shortage of irrigation water for the next crop season. In other sections of the State the snow-fall is reported to be near normal.

Most of the lambs that were on feed in the valley have been marketed at prices that returned the feeder a fair profit. The early closing of the sugar factory disrupted the feeding schedule somewhat because beet pulp was not available for the latter part of the feeding period. About 17 percent of the local beet crop was shipped to Lovell, Wyoming, for processing.

The price of hay has dropped from an early high of \$12 per ton to \$10 per ton. Feed grains are holding steady at \$1.50 per cwt. The price of butterfat has advanced to 28 cents per pound and eggs are selling for 30 to 35 cents per dozen.

Dan Hansen.

Newlands

During the two-week period ending January 26 the average maximum temperature was 42.8, with a maximum of 51 on January 23 and 25; the average minimum was 21, with a minimum of 12° on January 19. The mean temperature was 31.9°. The wind movement averaged 3.4 miles per hour. There was 0.36 of an inch of precipitation.

The snowstorm that started during the last week in December continued until January 20. All roads were closed to traffic. The snow reached a depth of nearly 200 inches at Summit Pass in the Sierras. This is nearly four times the normal snowfall at this time of year, and should assure a plentiful supply of water for irrigation during the coming season.

All F.E.R.A. projects at this station have been completed. The work on the dairy unit was completed on January 23. Other station work consisted of manuring rotation plots, corn ground, and pastures.

There has been a decided increase in the prices of farm products during the last few days. Butterfat is selling for 34½ cents a pound, eggs at 27 cents a dozen, beef at 8 cents, pork at 7 cents, and lambs at 6 cents a pound.

E. W. Knight.

Prosser

The temperatures during the week ending January 19 were as follows: Maximum 38, mean maximum 26.3, minimum 5, mean minimum 17.6, and the greatest daily range 24°. The precipitation (snow) amounted to 0.1 of an inch. The mean wind velocity was 3.87 miles per hour.

Work during the week included the usual office and laboratory routine.

The livestock market made gains during the week.

The top price for hops is 14 cents per pound, baled, f.o.b. car.

During the first part of the week ending January 26 the minimum temperature dropped to -6°. A chinook wind followed this low temperature, and the latter part of the week the maximum had reached 66°. The mean maximum was 47.6, the mean minimum 29, and the greatest daily range 40°. The rainfall amounted to 0.04 inch. The wind velocity averaged 3.48 miles per hour.

When the chinook wind reached the Prosser district the temperature rose 30° within four hours, and the small amount of snow that was on the ground disappeared very rapidly. The melting snow caused the Yakima River to rise to flood stage and overflow its banks near Toppenish. On January 26 the flow over the Sunnyside Dam was 18,900 cubic feet per second.

The alfalfa does not seem to have been materially damaged by the recent subzero weather.

Pruning of the apple orchard was started during the week.

Bureau of Reclamation crop reports for the Sunnyside division of the Yakima project show that crops had an average per acre value of \$41.71 during 1934.

Carl A. Larson.

Scotts Bluff

During the week ending January 19 the average maximum temperature was 37, with a maximum of 46; the average minimum was 9, with a minimum of -6°. The wind movement averaged 8.5 miles per hour. There was 0.06 inch of precipitation (snow) on the 16th and a number of other snow flurries that were not sufficient to measure the precipitation.

The F.E.R.A. labor was utilized in cleaning and pruning the wind-break, painting the bunk house, repairing the corral fence and gates, resetting and replacing fence posts, and stretching the wire on the south boundary line fence.

At the annual meeting of the Beet Growers' Association, held at Scottsbluff, Mr. S. K. Warrick was reelected president for the ensuing year. Dispute over the minimum initial payment on the 1935 contracts threatened to deadlock the meeting; many growers, contending that an initial payment of \$4.50 per ton was not high enough even with a 50-50 contract, were apparently opposed to anything but a flat price contract. The matter was finally tabled, but was considered at board meetings during the week. It appears likely an effort will be made at the joint meeting with the Great Western Sugar Company officials to get a 45-55 contract with an initial payment of \$4.50, in line with the Colorado association. The officers reported a 200 percent gain in membership the past year, with 81 percent of the growers now members.

Charges of violation of the hay embargo were filed against three men in the county this week, claiming they had shipped alfalfa hay from Goshen County, Wyoming, in violation of the Nebraska alfalfa weevil quarantine laws. The State Entomologist, who was sent here for a conference,

Scotts Bluff (cont'd)

issued a statement in which he said that "finding the alfalfa weevil in this county will mean the closing of outside markets for Scotts Bluff County hay in the future." Feeders claim that enforcement of the embargo on Wyoming hay will compel them to put thousands of sheep on the market immediately. In this vicinity alfalfa hay is selling for \$13 and \$14 per ton in the stack.

On the Denver market the price of cattle is the highest in four years. A carload from Mitchell brought \$11.15 at Omaha. Sheep continue strong at \$8.75 to \$9.00, with heavy movements to market.

The average maximum temperature for the week ending January 26 was 29, with a maximum of 62; the average minimum was 7, with a minimum of -22°. The week began with a severe cold wave and for two days the minimum temperature was -20 and -22, and the maximum was -5 and -10°. The wind movement averaged 11.4 miles per hour. A few snow flurries the first of the week registered only a trace of precipitation.

Station work consisted of sorting potatoes to eliminate culs and those frozen and so avoid spreading further decay; thawing frozen pipes in corrals, and hauling gravel to place around tanks. The F.E.R.A. labor has been repairing the east boundary fence, painting the water tank enclosures, cleaning out dead timber and pruning the windbreak, and hauling gravel for the new heavy traffic road.

Efforts made to arrange a time and place of meeting between the beet growers and the Great Western Sugar Company officials for discussion of the 1935 contract have been unsuccessful and resulted in charges being made by both the Nebraska and Colorado <sup>beet</sup> growers associations that the company is purposely delaying negotiations.

Sugar beet laborers, meeting with Nebraska and Colorado representatives in Denver, appear to be planning to strengthen their part of the 1935 beet contract.

February 9 has been announced as the closing date for signing the sugar beet crop adjustment contracts in Nebraska.

A bill introduced in the Nebraska Legislature to lift the embargo on alfalfa hay from Wyoming was defeated, and both State and local authorities have announced they will prosecute vigorously any violations of the alfalfa weevil quarantine laws. One of the men mentioned in our last report was fined \$100 and costs for bringing hay in from Wyoming.

There has been a heavy movement of lambs from Kansas and Oklahoma to market on account of the extremely cold weather of last week. Therefore, Nebraska lamb feeders have been advised to ship lightly for about 10 days.

Butterfat has advanced to 30 cents a pound and eggs to 21 cents a dozen. The livestock market continues strong.

Lionel Harris.

Umatilla

Weather conditions for the week ending January 12:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
49	25	37	0.23	2.55

The mixed grass and legume pasture plots were seeded during the

Umatilla (cont'd)

week. No other field work was done. Office work consisted of the regular routine and the compilation of reports. One day was spent with the Rural Rehabilitation Supervisor, going over suitable tracts of land for the re-establishment of farmers now on poor land.

Weather conditions for the week ending January 19:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
40	4	22	0.11	4.33

No field work was done during the week. Three days were spent with the Rural Rehabilitation Supervisor planning the reorganization of farms coming within that organization's work. The office work consisted of compiling and writing reports.

H. K. Dean.

Yuma

The maximum temperature for the week ending January 19 was 74, mean maximum 65.7, minimum 30, and mean minimum 40.5°. The precipitation amounted to 0.96 inch. During the two-week period beginning January 3 unsettled weather prevailed. The precipitation was part of a general storm over the entire Southwest. Several cloudy days with fogs were recorded.

On December 30 and 31 sharp earthquakes were experienced. These disturbances apparently centered near the upper end of the Gulf of California. Only minor damages to buildings were reported.

The temperatures in this section for the year 1934 were 3.1° above normal, or the warmest season in 65 years according to the U. S. Weather Bureau station at Yuma. The rainfall for the year was 2.32 inches, 1.15 inches below normal.

The cool weather that followed the rains early in the month was beneficial to the lettuce crop. Since January 1 shipments of 3 to 5 car-loads a day have been made from the Bard section and from 40 to 50 car-loads from the Yuma and Gila Valleys. Prices are holding up well near \$1.50 a crate.

Up to this time a total of 11,655 bales of cotton have been ginned on this project. The ginning season will continue until about March 1. There are approximately 300 more bales to come in. The average production for 1934 will be in excess of a bale to the acre.

Alfalfa hay in this section is bringing \$15 per ton baled, but only a limited amount is for sale. Alfalfa seed is quoted at 15½ cents a pound, eggs at 32 cents a dozen, and head milo or hegari at \$25 a ton.

Station work has included the S.E.R.A. ditch lining, picking and ginning cotton, plowing cotton plots, planting trees and ornamentals, and general irrigating and hoeing.

Mr. and Mrs. Scofield visited the station on January 9 and 10.

E. G. Noble.

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 Vol. XXXVII

February 2 and 9, 1935

No. 3

Newlands:

During the two-week period ending February 9 the average maximum temperature was 52.6, with a maximum of 59 on January 30; the average minimum was 27.9, with a minimum of 22° on February 2 and 3. The mean temperature was 40.2°. The wind movement averaged 1.71 miles per hour. There was 0.62 of an inch of precipitation.

During this period some rain and snow fell on the mountains, but generally the weather was warm. This caused some run-off into the Truckee and Carson rivers, furnishing water for storage. The most recent report of a snow survey, conducted by the States of California and Nevada, shows that the snow in the mountains is of an average depth for this time of the year. The snowfall during several recent years has been far below the average. As the greater part of the snowstorms in this section usually occur during February and March, the prospects for ample irrigation water are very bright.

Farm prices continue to advance. Butterfat is selling for 38 cents a pound, eggs at 25 cents a dozen, beef at 8 cents a pound, pork at  $7\frac{1}{2}$  cents, and sheep at  $6\frac{1}{2}$  cents a pound. The price of hay remains at \$8 a ton in the stack.

The improved prices of farm commodities have greatly improved the business conditions in Fallon. Merchants report an increased amount of buying. The larger amount of money in circulation is due in part at least to the F.E.R.A. and P.W.A. projects underway in this locality, about 100 men being employed in this work.

Work at the station has consisted of manuring rotation plots, leveling land, and repairing corrals.

E. W. Knight.

Prosser

The temperatures for the week ending February 2 were as follows: Maximum 47, mean maximum 40, minimum 33, mean minimum 33.6, and the greatest daily range 14°. The mean wind movement was 1.36 miles per hour. The weather was foggy most of the week.

The reservoir of the U. S. Bureau of Reclamation contained 738,000 acre-feet of water the first of the week. The capacity of the reservoir is 900,000 acre-feet. As there is little doubt that the reservoir will be filled this winter, water is being released at the present time as a flood prevention measure.

Early reports from the Tappanish area indicate that about 3,000 acres will be planted in sugar beets this year.

Prosser (cont'd)

The temperatures for the week ending February 9 were as follows: Maximum 45, mean maximum 41.6, minimum 18, mean minimum 28, and the greatest daily range 27°. The mean wind velocity was 1.44 miles per hour.

The lambs fed on contract at the station were shipped the latter part of the week. The contractors sold these lambs for 8 cents a pound f.o.b. Prosser.

Onions vary in price from \$15 to \$40 per ton. Those that are 3 inches in diameter or larger are being sold by growers for \$40 per ton.

Carl A. Larson.

Scotts Bluff

During the week ending February 2 the average maximum temperature was 54, with a maximum of 58; the average minimum was 21, with a minimum of 18°. The wind movement averaged 5.1 miles per hour. There was no precipitation.

The following work was performed by F.E.R.A. labor: Cleaned and enlarged the dairy house cesspool, making a new box and extending the overflow tile about 50 feet; extended about 250 feet the overflow from the station septic tank with 4-inch tile, to prevent the backing up and overflow which causes disagreeable effluvia, especially during the summer months; built forms and poured concrete for culvert on the heavy traffic road; placed tile under drive north of office building to carry irrigation water to station lawns; transplanted fruit trees prepared for moving last fall, and cut down trees interfering with telephone lines on south boundary line; continued the cleaning of windbreaks, repairing corral fence and gates, resetting posts, and rebuilding fence on north boundary and division lines.

Other station work was of a routine nature and included the sorting of potatoes. One car of potatoes from the Walker place was sold for seed at \$1.10 per cwt.

Butterfat is selling for 32 cents; at this time last year it sold for 18 cents. Eggs are steady at 21 cents.

The average maximum temperature for the week ending February 9 was 46, with a maximum of 61; the average minimum was 24, with a minimum of 18°. The wind movement averaged 7.2 miles per hour. There was no precipitation.

The sorting of potatoes was continued. F.E.R.A. labor tore down three old sheds, removed dead trees, repaired fence, graded road from the station to the Walker place, and continued work on the corrals and windbreaks.

Last week 82 carloads of lambs were shipped from the Scottsbluff section, making a total of 325 carloads shipped since January 1 as compared with 175 last year and 372 two years ago.

Representatives of the beet growers of Nebraska, Colorado, Montana, and Wyoming will confer in Denver on February 11 with officials of the Great Western Sugar Company in regard to the 1935 contract.

The signing of corn-hog contracts is reported to be progressing rapidly.

A report made by Manager Fleenor and Director Mathers of the Gering-Fort Laramie irrigation district, upon completion of a tour of the entire

Scotts Bluff (cont'd)

North Platte River watershed, shows that the Pathfinder reservoir is 144,000 acre-feet short of the amount of water in storage a year ago. However, on the North Park area of the watershed there is more snow than there was a year ago, which offsets the shortage somewhat.

Lionel Harris.

Umatilla

Weather conditions for the week ending January 26:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean	None	1.65
62	-7	34		

Messrs. E. C. Hill, of the Soil Erosion Project at Pendleton, and George A. Mitchell, of the Pendleton station, Division of Dry Land Agriculture, visited this station to obtain information as to the rate of silting of the reservoirs on the lower Umatilla River as a result of erosion from the upper country. The Superintendent made a trip to the reservoirs with them.

R. W. Morse, Extension Dairyman of the Oregon Agricultural College, visited the station to inform himself in regard to the dairy experiments being conducted here.

Weather conditions for the week ending February 2:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean	None	1.36
51	32	38		

No reactors were found when 42 head of dairy stock on the station were bled to test for Bang's disease.

The Superintendent attended a soil erosion conference at Pendleton at the request of Dean W. A. Schoenfeld.

Weather conditions during the week ending February 9:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean	None	1.38
46	21	37		

The results of the dairy feeding tests being conducted on the station were presented to the members of the Umatilla Cooperative Creamery at their annual meeting on February 6. During the past lactation year the group of cows fed hay alone produced 234 pounds of butterfat per head, while those on hay and concentrate mixture, which was fed at the average rate of 5.3 pounds per head per day, produced 281 pounds per head. When fed alone 41.3 pounds of hay was required to produce 1 pound of butterfat; but when 5.21 pounds of grain was included in the ration, only 31.6 pounds of hay was required to produce 1 pound of butterfat. An analysis of these figures shows that the 5.21 pounds of grain replaced 8.7 pounds of hay, which gives an extremely low value for the concentrate mixture. In a similar test conducted at Corvallis with alfalfa hay from

Umatilla (cont'd)

Willamette Valley the butterfat production on hay alone was only 166 pounds, but with hay and approximately twice as much grain the production was 278 pounds, indicating a material difference in the value of our hay as compared with alfalfa from the Willamette Valley.

Assistance was given to the feeds committee of the Farm Bureau Cooperative in revising the turkey rations to be used by that organization this year.

H. K. Dean.

Scotts Bluff

(The two paragraphs which follow were inadvertently left out of the report for the week ending February 2, appearing on page 10.)

The annual meeting of the North Platte Non-Stock Cooperative Cheese Company reported an increase of total income of approximately 100 percent over 1933, an increase of 80 percent in milk received, an increase of prices paid to farmers of 101 percent, and a total of 400 farmers now served between Henry and Bayard. The station began selling milk to this company the latter part of January.

Four carloads of turkeys were shipped by the Cooperative Poultry Marketing Association, making a record of 23 carloads for the year. An advance of 20 cents per pound was paid for prime young turkeys, 16 cents for choice old hens, 14 cents for old toms, and 12 cents for commercial, comparing favorably with the amount paid on earlier orders.

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February 16 and 23, 1935

No. 4

Huntley

During the two-week period ending February 16 the maximum temperature was 60 and the minimum 4°. The precipitation amounted to 0.29 inch.

Continued dry and mild weather prevailed during this period. Fields are dry and fall plowed lands in poor condition due to the shortage of winter precipitation.

The last of the 1934 crop of sugar beets was shipped to the sugar factory on February 9. The delay in processing resulted in severe losses of beets held in storage piles.

No agreement has been reached yet between growers and the sugar company on a contract for the 1935 season. The contract offered by the company was not acceptable to growers' representatives who met in Denver during the week of February 3. These representatives, who are from the four States in Great Western Sugar Company territory, have returned to consider the matter further with the various beet growers organizations. It is probable that negotiations with the Company will be resumed next week. The contract offered is similar to the one in effect during the past three or four years by which the grower received about \$5.50 per ton for beets.

Dan Hansen.

Newlands

During the two-week period ending February 23 the average maximum temperature was 50.6, with a maximum of 76 on February 20; the average minimum was 23.2, with a minimum of 16° on February 15. The mean temperature was 36.9°. The wind movement averaged 2.68 miles per hour. There was 0.25 of an inch of precipitation.

The mild weather has made it possible to continue the station crew on our land leveling operations, consisting of the construction of irrigation ditches and the leveling of some of the area.

At the present time a little less than 40,000 acre-feet of water is in storage. Little run-off has occurred from the heavy snows that fell in the mountains during January. The snow there now is about 5 or 6 feet in depth, a settling of 8 or 9 feet having occurred.

The prices of farm products on the San Francisco exchange, which governs prices on the Newlands project, to some extent, are as follows: Butterfat 34 cents a pound, eggs 24 cents a dozen, beef 9 cents, hogs 8½ cents, and mutton 6½ cents a pound. The local price of hay is \$8 a ton in the stack.

The results of the turkey experiment conducted last fall in coop-

Newlands (cont'd)

eration with the Nevada Agricultural Experiment Station may be summarized as follows:

The growth curves indicate that hens require less protein in the ration than toms. The amount of protein required and the relative cost of feeding hens and toms will be the subject of a future experiment. Satisfactory gains were obtained with a ration containing 23 percent of protein, which was cut to 17 percent at 21 weeks. Turkeys receiving a 13 percent protein ration did not make satisfactory gains and were not well finished by Thanksgiving time. A 28 percent protein ration did not increase the rapidity of growth during the early weeks of the experiment sufficiently to be profitable to feed; this proved to be a very expensive ration when fed throughout the feeding period. The two years experiments indicate that a ration containing more than 10 percent of total ash favors the development of crooked breastbones and slipped tendons, although crooked breastbones may result from other causes.

E. W. Knight.

Prosser

The temperatures for the week ending February 16 were as follows: Maximum 52, mean maximum 47, minimum 19, mean minimum 25, and the greatest daily range 27°. The rainfall amounted to 0.16 of an inch. The mean wind velocity was 2.59 miles per hour.

Work during the week included spreading manure on fields E-5 and E-8. Lambing is in full swing at the station now.

The temperatures for the week ending February 23 were as follows: Maximum 55, mean maximum 51, minimum 23, mean minimum 34, and the greatest daily range 28°. The rainfall was 0.18 of an inch. The wind movement averaged 2.13 miles per hour.

Work on the station during the week included hauling manure to the experimental plots, cutting corn-stalks, and burning weeds. The pruning of the apple orchard is nearly completed.

Carl A. Larson.

Scotts Bluff

During the week ending February 16 the average maximum temperature was 43, with a maximum of 50; the average minimum was 14, with a minimum of 8°. The wind movement averaged 8.7 miles per hour. The precipitation was 0.01 inch.

Station activities included the loading of a car of potatoes, sold to the Nebraska Certified Potato Growers' Association.

The first checks making payment of sugar beet benefit to farmers in the State were distributed in the Mitchell district. There were 33 checks amounting to a total of more than \$6,000.

The conference in regard to the sugar beet contract, unable to reach an agreement, has recessed, but tentatively consented to return to Denver on February 21 to resume negotiations. Neither the committee of growers nor the representatives of the company would disclose the nature of the discussions or the suggestions that had been made.

Three additional days have been allowed for the signing of the 1935 corn-hog contracts, more than 160 having been signed to date.

Scotts Bluff (cont'd)

Several subsistence homestead projects are now being developed in the State. Although it has been reported that the Government is buying 160 acres of good land near Scottsbluff to be divided into 7-acre tracts for this purpose, no official announcement has been made that such a project is to be started here.

The livestock market has been much better.

The average maximum temperature during the week ending February 23 was 53, with a maximum of 64; the average minimum was 25, with a minimum of 19°. The wind movement averaged 10.8 miles per hour. There was no precipitation.

On the 22d a very severe storm sent high into the air clouds of dust, which obscured the sun. Considerable damage to small buildings, trees, and all unprotected fields resulted. At the station the wind blew fiercely, averaging 44 miles per hour between 8 a.m. and 4 p.m.

Station activities consisted of the regular routine and preparing hotbeds for use this spring.

The F.E.R.A. labor continued work on the road to the Walker place, started rebuilding concrete culverts, began digging out the west line fence preparatory to leveling fence line and rebuilding.

Negotiations for the 1935 sugar beet contract will be resumed February 26. Frank A. Kemp, Executive Vice President of the Great Western Sugar Company, will be the company's spokesman. Beet acreage will probably be cut to about 10 percent below 1933 levels. Mr. Warrick, President of the local Beet Growers' Association, and Mr. Carney, President of the National Association, are in Washington, D. C., attending a conference of the A.A.A. to set production quotas in all sugar beet areas.

The second payment on the 1934 corn-hog reduction contracts has been distributed to farmers in this county.

The livestock market has shown a downward trend during this period with the exception of sheep.

Lionel Harris.

Umatilla

Weather conditions during the week ending February 16:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
55	20	39	0.31	4.19

No field work was done during the week. Agricultural committess of the Irrigon and Boardman granges, accompanied by the County Agent of Morrow County, spent one afternoon at the station drawing up agricultural programs for the year. The programs to be submitted to the subordinate granges deal entirely with means of bringing back yields of forage crops, particularly alfalfa and pastures. Incidentally, these programs, in the course of time, will have their effect on the livestock industries and the latter, in turn, will yield manure to make intensive cash crops more productive.

The latest survey on the Umatilla watershed reports that the snow has a moisture content about 30 percent higher than last year, or about equal to that of 1933, when we were able to obtain water for the station from the feed canal until late June.

H. K. Dean.

Yuma

During the two-week period ending February 16 the maximum temperature was 82, minimum 43, mean maximum 68.8, and mean minimum 49.1. The precipitation was 0.55 inch. From February 5 to 10, inclusive, there were light rains each day.

Since the middle of November the rainfall has amounted to 2.69 inches. These rains came about a month apart and were distributed as follows: November 0.60 inch, December 0.58 inch, January 0.96 inch, February to date 0.55 inch. These winter rains in combination with mild temperatures have been very favorable for winter grains, fall planted alfalfa, lettuce, and citrus crops. The minimum temperature so far this winter was 29°. There were killing frosts on three days in December and two in January.

A very satisfactory winter lettuce season is closing. Approximately 1400 carloads have been shipped. Prices f.o.b. Yuma were about \$1.50 per crate. The spring lettuce crop is starting to market this week.

Two cotton gins are still operating on the project, finishing the remnants of the 1934 crop. Up to February 14 a total of 12,490 bales had been ginned this season. The total in 1933 was 8,837 bales and in 1932 7,865 bales.

Cotton picking on the station was completed this week. At the station 45 bales of long staple cotton has been ginned, with four more bales to come in from cooperative plantings.

Summary of the average yields (pounds per acre) of Pima seed cotton from the irrigated rotations, 1923-1934

:1923:1924:1925:1926:1927:1928:1929:1930:1931:1932:1933: 1934: Av.												
:	:	:	:	:	:	:	:	:	:	:	:	:
Maximum:	1252	2136	2680	2758	2026	2584	2410	2544	1730	2008	2360	2880:1977
Minimum:	420	280	852	1044	664	668	696	612	474	310	580	888 : 692
Average:	797	904	1514	1780	1233	1706	1509	1787	1157	1166	1478	1774:1472

Summary of yields of Pima cotton in time-of-planting test

<u>Date of planting</u>	<u>Yields per acre,</u>
	pounds
May 15	1,478
May 1	2,592
April 15	3,264
April 1	3,094
March 15	2,938
March 1	3,178
Feb. 15	2,764

E. G. Noble.

## WEEKLY REPORTS

 Of The Division Of  
 WESTERN IRRIGATION AGRICULTURE  
 Bureau of Plant Industry  
 United States Department of Agriculture

(Not for publication without the prior consent of this Division.)

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Vol. XXXVII

March 2 and 9, 1935

No. 5

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Huntley

During the two-week period ending March 9 the maximum temperature was 60 and the minimum  $-13^{\circ}$ . The total precipitation amounted to 1.20 inches. Coming in the form of snow, this precipitation was the heaviest storm of the season. As the soil was becoming very dry, this moisture will be of much benefit to cultivated lands as well as to the range.

No agreement has yet been reached between the sugar company and the growers on a contract for sugar beets for the coming season. Montana growers seem inclined to await the outcome of the action taken by Nebraska growers in requesting settlement of contract disagreements by the Secretary of Agriculture under authority of the Agricultural Adjustment Act. Under a recent ruling of the A.A.A., contracts with the company must be signed by March 25 in order for a beet district to obtain the acreage allotted for the year.

Station work during this period included some minor repairs to buildings, and thinning and removal of some of the trees in the park adjacent to the station.

Dan Hansen.

Newlands

During the two-week period ending March 9 the average maximum temperature was 49.9, with a maximum of 67 on February 28; the average minimum was 21.2, with a minimum of  $9^{\circ}$  on March 9. The mean temperature was  $35.6^{\circ}$ . The wind movement averaged 4.18 miles per hour. There was 0.05 of an inch of precipitation.

There were heavy snowstorms in the mountains during the latter part of this period. The depth of snow on March 1 had fallen below the 20-year normal. As very little snow fell during February, there was some apprehension that a shortage of water might occur during the next irrigation season; but the recent snows have brightened the outlook for ample water. If the remainder of March and early April run true to form, there will be additional snow in the mountain areas.

Farm prices have fallen a little below their peak of four weeks ago. Butterfat dropped to 33 cents a pound and eggs to 21 cents a dozen. Buyers are now offering  $9\frac{1}{4}$  cents for steers, 8 cents for hogs, and 6 cents for yearling sheep. Few lambs are being offered for sale.

The higher prices which the farmer has been receiving for his farm products have resulted in improved business conditions throughout the project. It was rather surprising to note the rapidity with which the increased buying power of the farmers was reflected at the business houses in Fallon.

Newlands (cont'd)

The recent work at the station has included the diskng of grain ground, leveling land, and burning weeds. The plots of the K series have been seeded to sweet clover with grain as a nurse crop. Plot F-6 has been seeded to barley. The seeding of the other plots will be undertaken immediately.

E. W. Knight.

Frosser

The temperatures for the week ending March 2 were as follows: Maximum 52, mean maximum 48, minimum 21, mean minimum 27.5, and the greatest daily range 28°. The rainfall amounted to 0.18 of an inch. The mean wind velocity was 2.24 miles per hour.

The work of cleaning up around the station was continued. Hauling manure is almost completed and plowing was started.

The No. 1 grade of potatoes were sold at this station for \$8 per ton, sorted and sacks furnished.

Market prices: Barley, \$29 per ton; butterfat, 28½ cents per pound; onions, \$55 to \$75 per ton; hogs, \$8.25 per cwt.

The temperatures for the week ending March 9 were as follows: Maximum 54, mean maximum 50.7, minimum 19, mean minimum 28.6, and the greatest daily range 32°. The precipitation (snow) was 0.02 of an inch. The mean wind velocity was 3.24 miles per hour.

Water was diverted into the Sunnyside canal the first of the week and is expected at Prosser next week.

A crop rotation project has been planned and laid out on fields E-6, E-7, E-8, E-9, and J-2. This project consists of 102 one-tenth acre plots arranged in six series of 17 plots each, with 40-foot roadways and 5-foot clean cultivated alleys between plots. The following crops are to be used in the rotation: Alfalfa, corn, wheat, potatoes, sugar beets, and sweet clover. The rotation block is being plowed and the necessary irrigation ditches provided.

The price of butterfat increased 4 cents per pound during the week and is now 32½ cents per pound.

Carl A. Larson.

Scotts Bluff

The average maximum temperature during the week ending March 2 was 37, with a maximum of 60; the average minimum was 9, with a minimum of 11° below zero. The wind movement averaged 9.2 miles per hour. The precipitation (snow) amounted to 0.03 inch. From 4 to 12 inches of snow was reported on a large part of our watershed in Wyoming.

Station activities included spreading manure on the Walker place and on the garden plot, and sorting seed potatoes. The F.E.R.A. labor continued work on the road to the Walker place, building fence, hauling gravel, cutting wood, etc.

The bill providing for the compulsory inspection and grading of potatoes was defeated in the Nebraska Legislature.

A meeting of representatives of the Mountain States beet growers' association with officials of the Great Western Sugar Company failed to reach an agreement on the sugar beet contract. The directors of the

Scotts Bluff (cont'd)

Great Western Sugar Company appointed Frank A. Kemp, of Scottsbluff, General Manager at their regular quarterly meeting, and declared a dividend of \$1.75 a share on the preferred stock and 60 cents a share on the common.

A miniature shelter belt has been approved and will include the planting of more than 1,000 trees and 2,000 shrubs on each side of the Scottsbluff-Mitchell highway. Another similar project is contemplated on the other side of Baird where 1,640 trees will be planted.

The Colorado-Nebraska Lamb Feeders' Association is planning a new advertising campaign to stimulate the buying and consumption of lamb. Last week 76 carloads of lambs were shipped. Since January 1 the total movement of lambs has amounted to 547 carloads as compared with 417 carloads last year and 751 carloads two years ago during the corresponding period.

Butterfat is selling for 33 cents a pound and eggs for 16 cents a dozen.

The average maximum temperature for the week ending March 9 was 39, with a maximum of 52; the average minimum was 24, with a minimum of 16°. The wind movement averaged 12.6 miles per hour. The precipitation was 0.83 inch.

At the station the spring work has been started, including plowing and hauling manure. The F.E.R.A. labor continued rebuilding fences and began digging up the tile, which was used by Mr. Walker to siphon water from a lateral to the pump for irrigating dry land, and are using it for culverts. A program has been started whose ultimate aim is the extermination of all gophers on the station, using both traps and poison.

The highest prices for hogs and cattle in more than four years were received this week. Hogs reached \$9.65 a cwt. and the best steers brought a peak of \$14 a cwt.

Lionel Harris.

Umatilla

Weather conditions during the week ending February 23:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
54	27	44	0.25	3

Field work consisted of seeding alfalfa variety tests and pruning shrubs and trees around the buildings. Office work consisted of the regular routine and the compilation of reports.

Weather conditions during the week ending March 2:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
57	22	40	0.16	1.6

Mixed grass and legume pasture plots were seeded early in the week. There are 24 of these half-acre pasture plots which will be pastured with sheep later in the season after the crops are well established. In addition to the mixed pastures, there are five plots in sweet clover

Umatilla (cont'd)

strains and three in alfalfa. The alfalfa will be used primarily to obtain information on the bloating of livestock.

Assistance was given to the Rural Rehabilitation Supervisor in the selection of proper varieties of vegetables for relief gardens. The Oregon Relief Administration has ruled that all families on relief lists this year must grow a family garden whether they live in town or in the country. The Rural Rehabilitation Administration will have charge of these gardens, with overseers selected from relief lists.

The old alfalfa was renovated with a spring-tooth harrow. Alfalfa was seeded in the nut orchard, which will be used as a test of the value of manure on alfalfa.

In a talk at the Farm Bureau meeting the Superintendent gave the results of the curly-top investigations.

Weather conditions for week ending March 9:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
58	22	41	0.04	6.2

Land was prepared for a small-fruits test, in cooperation with Mr. Geo. F. Waldo, of the Division of Vegetable Crops and Diseases. This experiment will consist principally of tests of new crosses made at Corvallis, with enough of the standard varieties interplanted for comparison.

Alfalfa land was plowed for the time-of-planting and time-of-digging early potato tests, and trials in miscellaneous root crops.

A bill has been introduced in the Oregon Legislature to continue for another two years the 25 percent reduction in the appropriation for branch experiment stations and extension. Funds from this appropriation are used on the Umatilla station for conducting livestock investigations.

H. K. Dean.

## W E E K L Y R E P O R T S

Of The Division Of  
WESTERN IRRIGATION AGRICULTURE  
Bureau of Plant Industry  
United States Department of Agriculture

(Not for publication without the prior consent of this Division.)

Vol. XXXVIIMarch 16 and 23, 1935No. 6Belle Fourche

Report for period January 1 to March 16

During January the maximum temperature was 58, minimum -24, and the mean  $20^{\circ}$ . The mean temperature was  $3^{\circ}$  above normal. The precipitation was 0.11 inch as against a normal of 0.43 inch.

In February the maximum temperature was  $63^{\circ}$ , minimum 2, and the mean temperature  $32^{\circ}$ . The mean temperature was  $11^{\circ}$  above normal and the third highest mean temperature for February on record. The precipitation for February was 0.59 inch as against an average of 0.33 inch.

Up to this time the temperature for March is about average. The precipitation to date has amounted to 1.20 inches.

The Orman Dam contained 48,000 acre-feet of water on March 15. Much water has been coming down the Belle Fourche River, so that the storage at the end of March should be well above 60,000 acre-feet. With a normal rainfall during the season, sufficient irrigation water for the district is fairly well assured.

Over 50,000 lambs were fed in this district, of which probably 10 to 15 percent are left to be shipped. These lambs were bought at an average price of  $4\frac{1}{2}$  cents a pound. The average price paid for the lambs at Sioux City was about \$8.50 per cwt. On the whole the lamb feeders received as much for their feed by feeding as those who sold it for cash. The average price paid for alfalfa has been \$15 per ton in the stack, and grain has brought \$1.60 to \$2 per hundred.

This district was allotted 11,500 acres for sugar beets, a reduction of about 10 percent; but this has been increased to some 13,000 acres by the transfer of acreage from other territory in the Utah-Idaho district.

Lambing commenced here at the station on March 4 and is about two thirds finished at this time. To date an average of  $1\frac{1}{2}$  lambs to the ewe are living.

Last week the power line was rebuilt, both from the town of Newell and inside the farm, to a three-phase line to take care of the motors to be installed for pumping on the new well. The well started to flow after a bailing test in February, but the flow is rather small, only about 3 gallons per minute, so it was decided to install a turbine pump and pressure tank to connect with the present water system.

No field work has been possible to date on account of snow and rains.

Beyer Aune.

Huntley

The maximum temperature during the week ending March 23 was 53 and the minimum 19°. The precipitation was 0.14 inch.

Field work was started on the dry land plots during the week. Following the storms of the first part of March, in which the total precipitation was about 2 inches, the soil is in good condition for spring seeding. On the dry lands, however, there is no reserve supply of soil moisture at lower depths, and continued rains will be necessary to insure a crop.

Seed companies are in the field offering contracts for the growing of seed peas and beans; and it is probable that a fairly large acreage, particularly of beans, will be grown.

No agreement has yet been reached between growers and the Sugar Company on a contract for sugar beets for the coming season, either in this or in other sections of Great Western and Holly Sugar companies territory. April 1 has been set by the A.A.A. as the time limit for entering into a contract in order to obtain the acreage allotment for the year.

Prof. F. M. Harrington, Horticulturist of the Montana Agricultural Experiment Station, was a visitor at the Huntley station during the week.

Dan Hansen.

Newlands

The average maximum temperature for the two-week period ending March 23 was 54.6, with a maximum of 77 on March 13; the average minimum was 20.1, with a minimum of 9° on March 10. The mean temperature was 37.4°. The wind movement averaged 4.72 miles per hour. There was no precipitation.

The first part of March has been exceptionally windy. Many of the lighter soils of the area were damaged by blowing. Generally the wind blew hard throughout the day and subsided at night. The temperatures as a result approached the record lows of March, 9° above zero being the coldest during March this year, while the record is 8° above.

At Fallon beef is bringing 9 cents a pound, hogs 8 cents, lambs 8 cents, butterfat 33 cents, and eggs 22 cents a dozen. Hay is being offered at \$8 a ton in the stack.

Work at the station has consisted of leveling operations, cleaning ditches, and general repairing. Plots J-10, 11, 12, and 13 have been seeded to a wheat variety test. The varieties used were Spring Federation, Arizona No. 24, Little Club, and Early Baart. Plots Y-11 to 23, inclusive, have been seeded to barley. Plots Y-15, 16, 17, and 18, in addition to the barley, have been seeded to sweetclover. Plots Y-11, 12, 13, and 14 will be seeded to alfalfa later. Plots Y-19 to 23, inclusive, are included in the reclamation studies featuring gypsum and manure.

, E. W. Knight.

Prosser

The temperatures for the week ending March 16 were as follows: Maximum 71, mean maximum 57.7, minimum 23, mean minimum 35.8, and the greatest daily range 34°. The mean wind velocity was 4.73 miles per

Prosser (cont'd)

hour.

Water came into the Sunnyside Canal at the station on March 12, but no deliveries to farmers have been made.

Work during the week included surveying and laying out plots for the crop rotations, constructing forms for concrete head box at No. 3 delivery, and plowing and grading part of the crop rotation block.

Market prices: Prime steers,  $8\frac{1}{2}$  cents per pound; potatoes of the No. 1 grade \$15 per ton, sacks furnished, f.o.b. car.

Messrs. Lane, Gibson, and Jones, of the Wireworm Laboratory at Walla Walla, visited the station during the week.

The temperatures for the week ending March 23 were as follows: Maximum 57, mean maximum 53, minimum 16, mean minimum 22.8, and the greatest daily range  $35^{\circ}$ . The mean wind velocity was 4.44 miles per hour. Evaporation from free-water surface was 0.625 inch.

In Snoqualmie Pass of the Cascade Mountains the snow is 8 feet deep. The reservoirs of the Bureau of Reclamation are nearly full, so the Yakima Valley is assured of a good water supply this season. To the Sunnyside Canal 600 second-feet are being diverted. Water was diverted to the station March 23, three days later than last year. The alfalfa fields are now being irrigated.

One concrete diversion box was constructed at the head of the sixth series of the crop rotation plots. The excavation was made for the box to be constructed at the head of the fifth series. The trench for the 6-inch pipe was dug through series 1 and 2.

All wheat plots in the rotation block were seeded, rolled, and ditched. Wilt-resistant sugar beet seed was obtained from the Idaho-Utah Sugar Beet Company for the crop rotation plots. Trials will also be made on common and on accession No. 34 sugar beet seed to compare their value with U.S. No. 1 wilt-resistant seed. The sugar beet plots will have to be irrigated before planting unless there is sufficient rain.

Market prices: No. 1 hay, \$10.50 per ton, baled, f.o.b. car; No. 1 potatoes sacked, \$17.50 per ton, f.o.b. car; wheat, 72 cents per bushel; eggs, average large white, 19 to 22 cents a dozen; butterfat,  $26\frac{1}{2}$  cents per pound.

Carl A. Larson.

Scotts Bluff

The average maximum temperature for the week ending March 16 was 56, with a maximum of 75; the average minimum was 26, with a minimum of  $16^{\circ}$ . The wind movement averaged 13.1 miles per hour. There was no precipitation. A violent dust-storm on the 15th, similar to the one on February 22, did additional damage to unprotected fields.

The station activities included plowing and harrowing and preparations for starting the hotbed.

The F.E.R.A. labor continued to poison and trap gophers (to date 42 have been caught) and to remove tile from the Walker place, using it for culverts at this station. The west boundary fence has been entirely reset and straightened, the woven wire having been completely buried by soil as a result of recent severe dust-storms.

Scotts Bluff (cont'd)

Two carloads of short-fed yearling steers shipped to Omaha brought the highest price paid for that class of cattle since 1930 when they sold for \$11.65 a cwt.

The average maximum temperature for the week ending March 23 was 52, with a maximum of 60; the average minimum was 25, with a minimum of 18°. The wind movement averaged 11.6 miles per hour. There was no precipitation.

Dust-storms have been prevalent during the week and are continuing. It is believed that the heavy movement of dust is, in a large measure, a result of the recent drought. Much of the natural covering of grass plants has disappeared because of insufficient rainfall and overgrazing of the ranges. The protected fields in the irrigated area have not been seriously damaged by the wind.

Station activities included plowing, disking, and hauling manure on plots in the rotations. The preparation of the hotbed was completed.

This section has shipped 875 carloads of lambs since January 1 as compared with 746 carloads last year and 1066 carloads two years ago.

The annual meeting of the Nebraska Potato Improvement Association and potato show was held in Alliance on March 20 and in Scottsbluff on the 22d. Much valuable information concerning the culture and marketing of potatoes was given out by various speakers from this area, from Colorado, and from the University of Nebraska. A committee was appointed to study the probable effect on potato growers in this section of the potato allotment program proposed by the A.A.A.

Lionel Harris.

Umatilla

Weather conditions during week ending March 16:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
73	28	49	0.14	6.1

Field work during the week consisted of preparation of land for spring planting. Twenty-one seedling Chinese chestnut trees received from Chico were planted in the nut orchard. The surplus trees originally received from the Oregon Forestry Nursery were distributed to farmers. These trees consisted of three species of pine, green ash, Russian mulberry, and Russian olive.

Weather conditions during the week ending March 23:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	None	miles per hour
57	23	42		7.4

Additional black locust trees were planted along the west line for windbreaks.

Land was prepared for the general fruit orchard, in which a few standard varieties will be used for the purpose of comparison; but emphasis will be placed on new fruits which are developed from time to time, with special attention to hardiness. Approximately one third of

Umatilla (cont'd)

the ten acres will be planted this year, and the rest reserved for future plantings.

On March 21 a group of 28 students from the Oregon Agricultural College, accompanied by three professors, visited the station while on a tour of the Northwest primarily for the purpose of studying soil erosion. Had the students been here on the 24th they would have witnessed wind erosion in action. This storm was second only in severity to one which we had during the spring of 1932.

H. K. Dean.

Yuma

The maximum temperature during the two-week period ending March 16 was 87, mean maximum 72.7, minimum 36, and the mean minimum 43.4°. The precipitation was 0.13 inch.

Several days of cloudy weather with strong cold winds have held up plans for early cotton plantings. This weather, however, has been of some benefit in the harvesting of spring lettuce. Plantings of late cantaloups have been quite general in all sections of the project.

Station work during this period has included harvesting the first cutting of alfalfa, manuring land for cotton, fertilizing all alfalfa land with superphosphate, leveling plowed land on the rotations, repairing ditches and fences, general irrigating and hoeing.

The first plantings of Acala and Pima cotton in the time-of-planting test were made on March 15. The rotation plots will be planted to the Acala variety about the first of April. The various variety and strain tests of short staple cotton will also be planted about that date. The land for the Pima and SXP-30 test will be watered for planting on March 23.

Cotton ginning at the station was completed on March 6. In addition to the 11 bales of Pima from station tests, 40 bales were ginned for outside cooperators, including 4 bales from the Salt River Valley. Also 4 bales of Acala were ginned on our saw gin. The total for the season was 55 bales.

The Pima cotton belonging to five cooperators was sold on March 1 in Phoenix at an average price of  $19\frac{1}{2}$  cents a pound.

In cooperation with the Division of Irrigation, of the Bureau of Agricultural Engineering, four test wells were put down in the Bard section of the project. Two of these wells are on the station, another is a mile east on the Killian farm, and the fourth is two miles north on the McLaughlin place. These wells are made of concrete pipe 39 inches in diameter and average about 9 feet deep, or about 2 feet into the underground water. Recording drums and charts will be operated by 30-inch floats on two of the wells and by 12-inch floats on the other two. Mr. D. W. Bloodgood, of the Bureau of Agricultural Engineering, will have charge of the collection of data from these wells.

The elevations of the nine test wells on the station were checked recently by Mr. Bloodgood. The tabulation of the data from these wells for the period 1911 to 1934, inclusive, is now being done.

The S.E.R.A. work on the station ditches is being discontinued because of insufficient station funds to purchase materials. A request for a new project giving us more latitude in using this kind of relief labor has been turned down.

E. G. Noble.

## M I S C E L L A N E O U S

"Boron in Soils and Irrigation Waters and Its Effect on Plants. With Particular Reference to the San Joaquin Valley of California," by Frank M. Eaton, has recently been issued as Technical Bulletin No. 448 of the Department.

"Agricultural Investigations on the Newlands (Nev.) Reclamation Project," by E. W. Knight, has just been published as Technical Bulletin No. 464 of the Department.

Mr. F. D. Farrell, President of the Kansas Agricultural College at Manhattan, was a recent visitor in the Washington office.

## W E E K L Y R E P O R T S

Of The Division Of  
 WESTERN IRRIGATION AGRICULTURE  
 Bureau of Plant Industry  
 United States Department of Agriculture

(Not for publication without the prior consent of this Division.)

Vol. XXXVII

March 30 and April 6, 1935

No. 7

Belle Fourche

During the two-week period ending March 30 the maximum temperature was 71 and the minimum 2°. The total precipitation during March was 1.49 inches, whereas the average for that month is 0.74 inch. The total precipitation for the year to date is 2.19 inches, which is 0.69 inch above normal.

Field work was started on March 22 and all of field A was either duckfooted or disked and leveled.

On March 27 and 28 one of the worst dust-storms on record occurred. Fields of dry land winter wheat were badly damaged, fence lines were buried, and small irrigation ditches were filled up.

There was a material increase of irrigation water during March in the Belle Fourche Reservoir.

Station work consisted of repairing machinery, pruning orchard, trees, and shrubs; hauling manure, and caring for the livestock.

During the week ending April 6 the maximum temperature was 36 and the minimum 10°. There was 0.53 inch of precipitation.

As some snow fell on seven consecutive days, it was too damp to work in the soil. During the week 15 C.C.C. boys cleaned out irrigation ditches and fence lines after the storms of last week. Other work on the station consisted of hauling manure from our lamb feeding yard, transplanting trees on the grounds, pruning orchard, fencing, repairing machinery, etc.

Beyer Aune.

Huntley

The maximum temperature during the week ending March 30 was 63 and the minimum -4°. The precipitation amounted to 0.65 inch. The total precipitation for the month amounted to 2.80 inches, which is the highest for March since the station was established. A light snowfall followed by severe freezing stopped field work during the week.

Sugar beet growers and the sugar company have not yet reached a satisfactory agreement in regard to a beet contract for the coming season. The prices offered by the sugar company are in line with proposals of the sugar section of the A.A.A., but do not appear to be acceptable to the growers' association. At a series of meetings during the coming week further consideration will be given to the matter.

Dan Hansen.

Newlands

During the two-week period ending April 6 the average maximum temperature was 61.8, with a maximum of 72; the average minimum was 37.8, with a minimum of 17° on March 28. The mean temperature was 44.8°. The wind movement averaged 4.02 miles per hour. There was 0.45 of an inch of precipitation. This storm was fairly general over the Sierras, bringing an additional 2 feet of snow. The last measurement of snow on the Summit Pass in the Sierras showed 132 inches.

High winds have prevailed during this period, as in the first part of March. Little seeding could be done on the lighter soils of the station area. Until the winds subside or irrigation water is available it will be rather risky to try much seeding on the newly leveled areas.

The prices of farm products have changed very little since the report of two weeks ago.

The work at the station has consisted of leveling plots in preparation for seeding, putting in irrigation structures, preparing one acre of ground for an orchard, and planting in the greenhouse. The seeding in the greenhouse includes such garden crops as tomatoes, eggplant, peppers, and cabbage. Some plantings of annual flowers have also been made.

E. W. Knight.

Prosser

The temperatures for the week ending March 30 were as follows: Maximum 68, mean maximum 55, minimum 18, mean minimum 30.5, and the greatest daily range 37°. The mean hourly wind velocity was 6.76 miles per hour.

The weather has been generally windy during the week with frequent dust-storms. Some of the corrugations in the wheat plots on the new rotation block were partially filled with soil by the wind, but in general the field was not damaged. The rainfall for the past three months has amounted to 0.69 inch. This is 1.14 inches below the 11-year average for this period.

During the week concrete boxes were constructed at the head of the third, fourth, and fifth series of the rotation plots. A 4-inch tile pipe line was laid to a neighboring ten-acre tract from the fifth series water-box. North and south through the second series 195 feet of 6-inch concrete pipe was laid. Cedar flume sections were strung out at the head of the fifth and sixth series and will be connected as soon as the metal gates are attached.

The only important change in the market was an increase of \$3 per ton in the price of No. 1 potatoes, which are now \$23 per ton.

The temperatures for the week ending April 6 were as follows: Maximum 56, mean maximum 49, minimum 14, mean minimum 25, and the greatest daily range 33°. The mean wind velocity was 4.04 miles per hour. The precipitation was 0.37 of an inch. The minimum temperature of 14° is the coldest April temperature that has been recorded at the station. A snowstorm on April 4 resulted in 0.35 of an inch of precipitation. The snow was heavy but did not stay on the ground very long.

Some free fruits were heavily damaged by the extremely cold weather which has prevailed throughout the valley. In some instances orchard heating was not sufficient to prevent damage.

Prosser (cont'd)

Work accomplished on the rotation block during the week was as follows: Concrete water-boxes were constructed at the head of the first and second series of plots; 6-inch concrete pipe was laid through the first series connecting with that already laid through the second series; a flume was installed at the head of the sixth series.

Precipitation during the week was sufficient to moisten the surface soil so that sugar beets could be planted. All of the 14 plots of the various rotations were seeded. Wheat plants emerged at the end of the week on all of the wheat plots in the rotation block.

Carl A. Larson.

Scotts Bluff

During the week ending March 30 the average maximum temperature was 55, with a maximum of 65; the average minimum was 25, with a minimum of 9°. The wind movement averaged 13.9 miles per hour. There was a trace of precipitation in the form of snow. Dust-storms have occurred every day during the week.

The station activities have included plowing, harrowing, and disk-ing in the rotations and on the Walker place; hauling manure, and repairing farm machinery.

The F.E.R.A. labor repaired the machine shed; worked on leveling the wash-out that we have been filling with trash on the Walker place; plowed and started leveling west boundary fence line; removed fence from pastured rotations; leveled ditch banks; built forms for walk to be made of sand and gravel from the mess-house to the coal-shed and to the main drive, which will keep irrigation water from flooding mess-house basement; eradication and extermination of gophers continued, approximately 90 having been killed to date.

The Pathfinder Reservoir had 81,000 acre-feet of water in storage as of March 20 as compared with 245,000 acre-feet last year on that date.

Directors of the Mountain States Beet Marketing Association have decided to make no further proposals to the Great Western Sugar Company for a 1935 sugar beet contract until that company advances some plan to break the contract deadlock. On March 26 in Mitchell S. K. Warrick, President, and H. R. Lippincott, Vice President, of the Beet Growers' Association, addressed more than 300 farmers of the project on the sugar beet question.

A 160-acre tract has been purchased near Scottsbluff by the Nebraska Rural Rehabilitation Corporation and will soon be transformed into a huge garden.

The Scotts Bluff section had 165,000 lambs left in feed-lots on March 23 as compared with 150,000 last year. Since January 1 990 car-loads of lambs have been shipped as compared with 847 carloads last year and 1,161 in 1933.

During the week ending April 6 the average maximum temperature was 35, with a maximum of 58; the average minimum was 21, with a minimum of 15°. The wind movement averaged 12.7 miles per hour. There was 0.32 of an inch of precipitation in the form of snow.

At the station the grain and beet plots in the rotations were prepared for planting. The hothouse was planted with seeds of various varieties of vegetables. Mr. Nuckols spread several kinds of manure in dif-

Scotts Bluff (cont'd)

ferent amounts on some 80 plots for the manure experiments on sugar beets that he has planned to conduct here this year.

The F.E.R.A. labor was engaged in the following activities: Leveled the yards around the farm buildings to help control water and to prevent further washing. The foundation posts of one of the windmills were replaced with new ones, as the old posts were almost completely rotted away. Completed building of fence on the west line of the farm. The campaign to eradicate gophers was continued. Hauled cement gravel for culverts and head gates to be built in field K.

There was an increase of 30,000 acre-feet of water in the Pathfinder Reservoir during March. The latest measurement of the water stored in the reservoir showed 93,000 acre-feet as compared with 63,000 at the close of February.

The highest price paid for cattle since 1930 was reported this week for a carload of prime Nebraska steers, averaging 1205 pounds per head, which brought \$14.65 per cwt., 45 cents above the best quotation in recent weeks. Lamb feeders were urged to hold back shipments the remainder of the week and then to market approximately 225,000 head per week the rest of the season. It is thought that this policy will result in better prices.

At a meeting held in Scottsbluff on April 5 the proposed 1935 sugar beet contract of the Great Western Sugar Company was rejected by the Western Nebraska sugar beet growers.

Lionel Harris.

Umatilla

Weather conditions during week ending March 30:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean		miles per hour
62	23	42	None	8.2

The land for the orchard was covered with straw to prevent soil blowing and was seeded to rye.

On account of the extremely dry weather that prevailed during March it was necessary to start irrigating about three weeks earlier than normal. New seedings of alfalfa, sweetclover, and grasses planted in late February and early March had not yet emerged, so the new plantings were irrigated first.

Mr. B. F. Dana, Pathologist, Division of Fruit and Vegetable Crops and Diseases, visited the station to start the curly-top work this year.

Weather conditions during week ending April 6:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	Inch	miles per hour
60	23	40.6	0.27	3.6

Irrigation was continued on the established fields as well as on the new. The standard varieties of apples, cherries, peaches, apricots, plums, and grapes, which will be used as a basis of comparison with newer varieties, were planted. Land was prepared for the alfalfa seed tests. The manure that has accumulated in the cow corrals was piled with a Fresno (scraper) for composting to kill the weed seeds.

H. K. Dean.

W E E K L Y   R E P O R T S

Of The Division Of  
WESTERN IRRIGATION AGRICULTURE  
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Vol. XXXVII

April 13 and 20, 1935

No. 8

Belle Fourche

During the week ending April 13 the maximum temperature was 61 and the minimum 19°. There was 0.33 inch of precipitation.

Activities at the station included planting trees and shrubs, ifencing temporary pastures, hauling manure, caring for the livestock, and general repairs.

During the week ending April 20 the maximum temperature was 70 and the minimum 16°. No precipitation was recorded.

High winds prevailed on the 14th and 15th. On some of the fields the soil was blown badly, filling up ditches and fence lines. A group of C.C.C. boys worked cleaning up ditches and fence lines.

The oats, wheat, barley, sweet clover, red clover, and alfalfa were planted in field A. After the maximum production plots were duckfooted, leveled, and harrowed, wheat, oats, barley, and alfalfa were planted.

The Utah-Idaho Sugar Company made another payment of 25 cents a ton on sugar beets, amounting to \$21,000 for this district. So far the Company has paid the growers \$4.50 per ton on the 1934 sugar <sup>beet</sup> crop. To date approximately 12,500 acres have been signed up for this year's crop and over 1,000 acres have been planted.

Beyer Aune.

Huntley

The maximum temperature during the week ending April 13 was 64 and the minimum 8°. There was 0.61 inch of precipitation. The total rainfall since March 1 has amounted to 3.79 inches, which is more than the total for the preceding six months.

No field work was possible during the week, and very little field work has been done so far this spring.

No agreement has been reached in regard to a sugar beet contract for the present season. A meeting of all growers in the section is to be held on April 16 to consider the contract offered by the Great Western Sugar Company. This contract is based on recommendations of the sugar section of the A.A.A. The rate of pay for contract hand labor in beets is also not yet settled. While beet workers are demanding \$27 per acre, growers are contending that under conditions of the contract which the sugar company is offering they will be able to pay only \$19.50 per acre. With the close approach of planting time, farmers are becoming concerned over the failure to reach satisfactory agreements and avoid delayed planting such as resulted from a similar situation in 1934.

Dan Hansen.

Newlands

During the two-week period ending April 20 the average maximum temperature was 65, with a maximum of 80 on April 20; the average minimum was 33.7, with a minimum of 24° on April 18. The mean temperature was 49.4°. The wind movement averaged 4.76 miles per hour. There was 0.30 of an inch of precipitation.

Work on two S.E.R.A. projects at the station has been started. The project approved for the State involves the construction of a new concrete silo, the laying of additional concrete flooring for the hog pens, and the building of a turkey brooder house. Work performed on the station project so far has consisted of cutting back all tamarix plantings, filling in obsolete ditches, and general cleaning up around the buildings. Included in the latter project is the mapping of the station area. With the numerous changes that have been made in the topography and detail of the station area, such a map is needed.

Seeding has been completed on series 2, or the old D and E series. The orchard plantings are practically completed and a small garden has been seeded between the orchard rows.

Lloyd Moon.

Prosser

Temperatures for the week ending April 13 were as follows: Maximum 71, mean maximum 64.7, minimum 27, mean minimum 36, and the greatest daily range 37°. The mean wind velocity was 4.06 miles per hour.

Work on the station included flume construction on the crop rotation series and the seeding and ditching of the alfalfa plots on the various rotations. The alfalfa seed used was South Dakota No. 12, a northern-grown common variety, which has given good results at this station.

The top price of No. 1 potatoes increased \$9 per ton and is now \$35 per ton f.o.b. car. Butterfat is now 28½ cents per pound.

Temperatures during the week ending April 20 were as follows: Maximum 70, mean maximum 63, minimum 27, mean minimum 37.4, and the greatest daily range 33°. The mean wind velocity was 4.72 miles per hour.

Three varieties of sugar beets (U.S. No. 1, commercial, and Excession 34) were planted on one-tenth acre plots just north of the crop rotation block. The last variety named is thought to be more resistant to wilt than any of the varieties used so far. Sugar beets in the various rotations were ditched and part of them irrigated.

Due to the minimum temperature of 27° the apple orchard had to be heated.

Carl A. Larson.

Scotts Bluff

The average maximum and minimum temperatures for the week ending April 13 were 48° and 28°, respectively. The maximum temperature, 56°, was recorded on April 13, and the minimum, 21°, on April 7. The wind movement averaged 15.9 miles an hour. Snow and rain the first part of the week resulted in 0.33 of an inch of precipitation. On the 8th a fine, thick dust, which had been stirred up by a violent windstorm somewhere in the southwest, hung listlessly in the air on the eastern slopes of the Rocky Mountains.

Scotts Bluff (cont'd)

The grain, alfalfa, and beet plots in fields C and K are now ready for seeding, which will commence next week. Moisture conditions in the soil are favorable for planting seed, but the subsoil is still very dry. Most of field E, the Walker place, and the dry land have been plowed. On the dry land the tractor is being used to good advantage.

Many dandelions have been dug out of the lawn. Other station work has included pruning shrubs and trees.

Grain is being planted throughout the valley but not sugar beets, for the growers' association and the Sugar Company have not yet agreed on a contract. A rather large acreage of hemp will be grown by farmers of Bayard this year at a price of \$15 per ton.

Last week 141 carloads of lambs were shipped from the valley as compared with 94 carloads for the same period last year.

Plans have been made for the construction at an early date of 22 houses on the subsistence farm west of Scottsbluff. All agricultural workers were dropped from relief rolls here on Tuesday.

During the week ending April 20 the average maximum temperature was 61, with a maximum of 72; the average minimum was 32, with a minimum of 20°. The wind movement averaged 10 miles an hour. The evaporation was 0.206 inch. No precipitation was recorded.

On April 20 the Pathfinder Reservoir contained 117,000 acre-feet of water and the Guernsey 25,000 acre-feet. The unfavorable prospect for irrigation water is doubtless influencing many beet growers in their refusal to accept the contract offered by the Sugar Company. No agreement has been reached to date.

All grain, alfalfa, and sweet clover plots in the rotations have been seeded. This year 20 alfalfa plots were seeded in field K where normally 10 are sown. The alfalfa that was sown last year failed completely except in two plots that were seeded with a nurse crop, where at the present time the stand of alfalfa is 25 to 50 percent. In field C 6 acres have been seeded to sweet clover for an emergency cow pasture this summer. On the Walker place 6 acres were seeded to oats and sweet clover and 14 acres to barley and alfalfa. The beet plots are ready for seeding, which will commence next week. Dr. Hewett M. Tysdal, Agronomist of the Division of Forage Crops, planted six strains of wilt-resistant alfalfa here on Thursday.

About 700 feet of pipe line, for filling the evaporation tank, has been laid from the bull pen to a location in field C where all the weather apparatus will soon be moved.

An extensive program of tree planting in Nebraska is now under way. At the present time trees and shrubs are being planted along the highway between Minitare and Mitchell.

The production of winter wheat in Nebraska this year is estimated at 11,000,000 more bushels than a year ago in spite of dust-storms and drought, according to report of A. E. Anderson, State and Federal crops statistician.

Lionel Harris.

Umatilla

Weather conditions for week ending April 13:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
75	32	52	0.67	4

Umatilla (cont'd)

During the week land was prepared for five one-acre plots of native grasses for the purpose of obtaining information on seed producing possibilities. It was necessary to use the land in the north 20-acre tract, which had not been graded before.

A test of root crops, including a number of mangels, carrots, and Jerusalem artichokes, was planted. An additional bed of Pyrethrum was planted to give enough plants for the entire two acres contemplated. The remaining varieties of tomatoes were started in the hotbed for the curly-top test. Plants of Artemisia absinthium to establish a half-acre plot for testing its content of worm-wood oil were obtained from N. R. Mueller.

Mr. M. R. Lewis, of the Division of Irrigation, Bureau of Agricultural Engineering, visited the station for the purpose of formulating preliminary irrigation experiments. It is planned to measure the water in a rather large number of borders and to take soil moisture samples on part of them with a view to obtaining information in regard to the rate and depth of percolation and the water-holding capacity of the soil.

H. K. Dean.

## M I S C E L L A N E O U S

Mr. C. S. Scofield was unable to return to Washington on April 20 as planned because of Mrs. Scofield's critical illness due to an intercranial hemorrhage, which resulted in her death at Riverside, California, on April 18. Mr. Scofield is now scheduled to reach Washington on May 1.

## W E E K L Y R E P O R T S

 Of The Division Of  
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Vol. XXXVII

April 27 and May 4, 1935

No. 9

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Belle Fourche

During the week ending April 27 the maximum temperature was 83 and the minimum 33°. There was 0.01 of an inch of precipitation.

The planting of oats and alfalfa was completed in field W. All the land to be planted to sugar beets was duckfooted and harrowed. The beets and mangels were planted in the maximum production experiment. Field O, which will be planted to corn, was disked and gone over with the float.

The brood sows and their pigs were turned into field K, which was fenced for hog pasture.

During the week ending May 4 the maximum temperature was 63 and the minimum 19°. There was 0.11 of an inch of precipitation. The total precipitation from the first of the year to May 1 was 3 inches. This is 0.08 of an inch below the normal. The precipitation for April was only 0.81 as compared with an average of 1.58 inches.

The planting of sugar beets in field A was completed during the week. All the plots in field A to be planted to corn, flax, late seeded grains and potatoes were duckfooted. Some alfalfa was seeded without a nurse crop. During the week a truck load of Black Hills spruce was obtained from the Hills and planted on the grounds and in the irrigated forest. The town of Newell also obtained a truck load, which was distributed free to the property holders. Some were planted in the town park and some on the school grounds. About 7,000 acres of sugar beets have been planted in the district to date.

Water will be turned into the canals, beginning about May 10, for filling stock ponds and for early irrigation of alfalfa. The storage in the reservoir is considerably less than on this date last year, and it will be necessary to practice every possible economy in the use of water to make it go as far as possible. At the present time the available supply indicates an allotment of 8 inches per acre.

Mr. A. C. Hildreth, Superintendent of the Horticultural Field Station at Cheyenne, Wyoming, was a station visitor. Planting of apples, plums, and small fruit will be carried on in cooperation with the Horticultural Field Station. Various varieties of apples will be set out in field G, series IV, and several varieties of plums in series V.

Beyer Aune.

Huntley

During the week ending April 20 the maximum temperature was 69 and the minimum 33°. There was 0.06 of an inch of precipitation.

Huntley (cont'd)

Weather conditions were favorable for field work during this period and good progress was made in preparing plots for seeding, although no seeding was done. The heavy rainfall of the past six weeks has left the soil in excellent condition.

Some progress was made in the settlement of contracts for sugar beets. The question of the rate of pay for hand labor was referred to the AAA for settlement. After a hearing before a representative of the sugar section of the AAA, the price for this labor was set at \$21.50 per acre for beets yielding up to 12 tons per acre, with an additional 60 cents per ton for yields above 12 tons. Growers had offered \$19.50 per acre while labor was asking for \$27.50. Community meetings of beet growers will be held on April 22 to vote on the question of accepting the contract offered by the Sugar Company. This contract would pay approximately \$5.35 per ton, which with payments under the AAA, it is estimated, will make the total price for the crop amount to from \$6.75 to \$7.00 per ton.

Dan Hansen.

Newlands

During the two-week period ending May 4 the average maximum temperature was 64.5, with a maximum of 75; the average minimum was 34.5, with a minimum of 25° on April 24. The mean temperature was 49.5°. The wind movement averaged 4.25 miles per hour. There was 0.40 of an inch of precipitation.

The greater part of April remained cool, and as a result there was little crop growth. Throughout this period some new seeding on the lighter soils of the project was blown out by frequent high winds. With the coming of May, however, the usual summer weather of this locality has prevailed.

The prices of agricultural products remain about the same with the exception of butterfat, which has decreased to 27 cents per pound.

Work at the station has consisted of one general irrigation of grain plots and the preparation of additional ground for seeding. In addition to the usual farm work, the FERA laborers allotted to the station have been employed cleaning up ditches and the station premises, constructing fences, and eradicating weeds.

The State of Nevada has had constructed at this station to date a 32' x 48' hog feeding floor, a 15' x 25' concrete manure pit, and a new turkey brooding house. The concrete silo is about one third complete.

E. W. Knight.

Prosser

Temperatures during the week ending April 27 were as follows: Maximum 73, mean maximum 67, minimum 29, mean minimum 35, and the greatest daily range 40°. The mean wind velocity was 5.38 miles per hour. The rainfall amounted to 0.01 of an inch.

Construction work on the irrigation system was completed. A small concrete box was placed at the end of a 6-inch pipe in the first series flume line. This pipe will supply water to the first four series. The fifth and sixth series are on another pipe line. The irrigation of sugar beets and new seeding of alfalfa was continued in the rotation. Drain ditches were provided for all series and plots in the block.

Prosser (cont'd)

Six one-twentieth acre plots were laid out and planted on field A-7 to show the rate that wheat should be seeded as a nurse crop for alfalfa. The entire field is being seeded to alfalfa this year.

A 4-inch tile pipe line was laid at the head of the cherry orchard. This line completes the permanent irrigation system for the orchards, which are now all equipped with pipe line and risers or with galvanized metal flume.

Temperatures during the week ending May 4 were as follows: Maximum 80, mean maximum 69, minimum 31, mean minimum 36, and the greatest daily range 43°. The mean wind velocity was 3.50 miles per hour.

Orchard irrigation was started April 28. No soil samples will be taken this year except occasionally in connection with respiration studies.

Irrigation of the crop rotations was continued. All wheat plots received the first irrigation. The second irrigation was started on the alfalfa plots. Six plots of sugar beets were reseeded because the stand was too thin.

The only important change in the prices of farm products was a decrease of \$8 per ton in the price of potatoes, which are now \$32 per ton f.o.b. car.

Carl A. Larson.

Scotts Bluff

During the week ending April 27 the average maximum temperature was 56, with a maximum of 75; the average minimum was 35, with a minimum of 32°. The wind movement averaged 12.6 miles an hour. The average daily evaporation was 0.206 inch. Precipitation, in the form of rain and snow, amounted to 2.34 inches.

Field work continued normally on Monday and Tuesday, but was checked during the remainder of the week by wet weather. Only a part of field K was planted in sugar beets before the rain. Several culverts have been put across ditches in field K under the supervision of Mr. Leslie Bowen.

Messrs. Blackburn and Harris left here Wednesday morning for the Cheyenne Horticultural Station but were overcome 30 miles east of Cheyenne by a blizzard, which, after a three-hour struggle with wind and snow, marooned them for two days in the small town of Pine Bluff. Over a foot of snow fell in the Cheyenne region and in places piled up in drifts to a depth of 10 to 12 feet. Traffic was held up until Saturday afternoon. The storm supplied abundant water to a vast territory in which a distressing drought has prevailed and no doubt greatly increased reservoir supplies.

At a meeting on April 22 a committee representing the Beet Growers Association rejected the contract offered by the Great Western Sugar Company. It is possible that the recent moisture may help to break the deadlock.

A shipment of 30 steers from Mitchell brought a new top price of \$15.85 per hundred on the Chicago market this week. Last week 111 car-loads of lambs were shipped from this section; 35,000 remain on hand as compared with 55,000 at this time last year.

Alfalfa hay is now selling locally for \$14 to \$18 a ton.

Scotts Bluff (cont'd)

The average maximum temperature during the week ending May 4 was 51, with a maximum of 63; the average minimum was 31, with a minimum of 26°. The wind movement averaged 10.5 miles an hour. The average daily evaporation was 0.285 inch. There was 0.07 of an inch of precipitation (snow).

On April 29 the Pathfinder Reservoir contained 131,680 acre-feet of water and the Guernsey 24,850 acre-feet.

To date no leaves have appeared on the maples and cottonwoods. Alfalfa and sweet clover have made slow growth. Early seeded spring grains, alfalfa, and sweet clover are getting a good start as a result of the recent moisture.

Sugar beets have been planted in fields K and E. Oats and sweet clover have been sown in the pasture north of the corrals and about 8 acres on the dry land. The weather apparatus has been moved to the new location east of the farm buildings. Work has been continued on culverts in field E.

To date 30,000 acres of sugar beets have been signed up by the Sugar Company despite the refusal of the Association to accept the 1935 contract.

Farmers in Scotts Bluff, Sioux, and Banner counties have applied for emergency seed loans totaling approximately \$17,000.

Lionel Harris.

Umatilla

Weather conditions during the week ending April 20:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
74	35	54.7	0.06	5

A trip was made by truck to Prosser, Washington, to obtain a corrugator which formerly belonged to this station and had been transferred to Mr. Wright.

Preparation of 5 acres of land for grass seed tests was completed. Five varieties of grass of interest to the Soil Erosion Service will be planted. Land was prepared for a half acre of Artemisia absinthium and the plants were transplanted. A test of four of the newer varieties of late potatoes was planted.

A. O. Larson and F. G. Hinman, of the Bureau of Entomology, stationed at Corvallis on Pea Weevil Investigations, collected the cages in the overwintering test on this station. In the cage placed near the ground only 14 percent were killed during the past winter. Those exposed on posts, in trees, and in the weather instrument shelter had from 32 to 72 percent killed. Last winter was the third one during which cages of insects for winter-killing tests have been exposed. The first winter the cages became full of sand, thus killing the insects; and a year ago a mild winter killed at about the same rate as this past winter, during which the minimum temperature was -7°.

During the week ending April 27 the following weather conditions prevailed:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	Miles per hour
76	32	52.8	0.17	5.1

Umatilla (cont'd)

All the new seeding of alfalfa, sweet clover, and grasses was irrigated during the week. One man was employed continuously cleaning growth, mostly volunteer rye, from ditches.

A field meeting attended by 16 farmers was held to view the cover crop tests, which are under way on the land to be used for curly-top experiments during the coming season. Austrian winter peas and vetch were used in addition to rye. The rye crop was waist high at the time of the meeting, peas and vetch about half that high.

Mr. M. R. Lewis, of the Division of Irrigation, Bureau of Agricultural Engineering, spent a half day at the station planning water measurement and soil moisture investigations to be conducted this season.

## Weather conditions during the week ending May 4:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean		
85	33	56.3	None	3.9

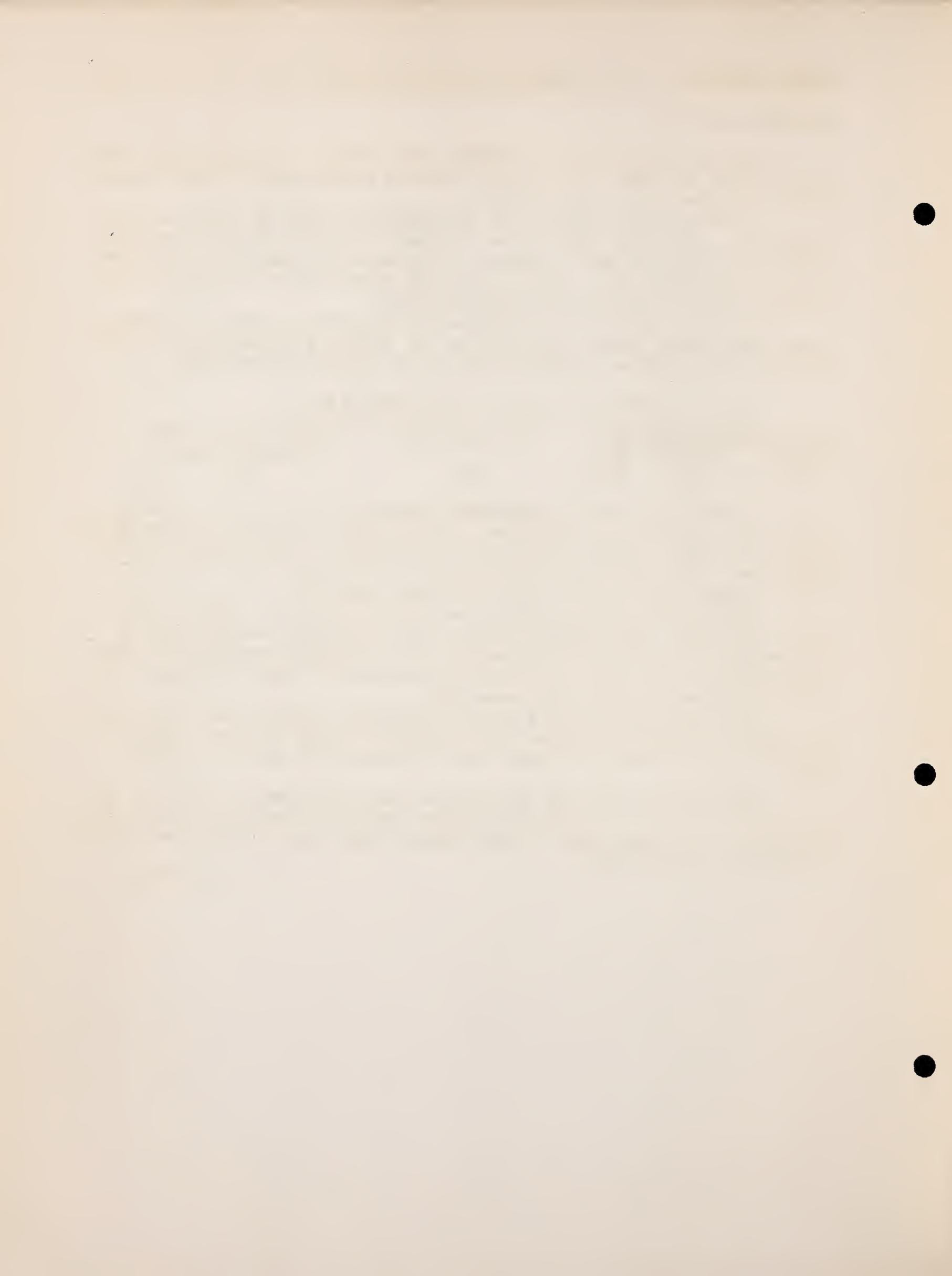
An additional acre of Pyrethrum plants has been set out. These plants were started in a coldframe last September and made a steady growth during the winter months, being protected during the cold weather by the glass sash. They are just as good plants as the ones which were established a year ago and set in the field last September.

Four hundred day-old poultts were received for the turkey experiments this year. While plans have not been definitely decided upon in cooperation with the Poultry Department of the Oregon Experiment Station, it is certain that they will deal with the protein content of feeds, extending the work started some years ago.

Tees and distribution pipe with galvanized outlets were built for the orchard irrigation system, and laying of the pipe line was begun. This line will be 850 feet long, with a distribution valve at each tree row.

The rye and vetch and the rye and pea cover crops on the land immediately south of the station buildings, which will be used for the curly-top tests, was plowed under and the ground worked down and furrowed out in preparation for planting.

H. K. Dean.



## WEEKLY REPORTS

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May 11 and 18, 1935

No. 10

Belle Fourche

During the week ending May 11 the maximum temperature was 80 and the minimum 28°. There was 0.27 of an inch of precipitation.

The following were planted in the north one half of F-1: Orchard grass, blue-grass, bromegrass, crested wheat grass, meadow fescue, slender wheat grass; Grimm, Ladak, Cossack, and Baltic alfalfa; and white clover.

Hemp seed for the production of fiber was obtained from the Northwest Hemp Corporation, Mankato, Minnesota, and planted both on dry and on irrigated land. The Rapid City Chamber of Commerce requested that this crop be tested in order to obtain information as to its possibilities as a crop for western South Dakota.

During the week ending May 18 the maximum temperature was 74 and the minimum 33°. There was 1.01 inches of precipitation.

Field A was duckfooted and harrowed and the late grains and flax were planted. During the week the temporary pastures in field A were fenced, and drain tile was laid. The sheep were turned out to pasture in field D on May 16.

The rain the first of the week made unnecessary the turning in of irrigation water. This rain was most timely and should bring up with good stands all the crops that have been planted.

At the present time the reservoir holds 73,000 acre-feet of water. Because of the rains no irrigation will be necessary until the first part of June. With normal precipitation there should be a sufficient supply of irrigation water to mature all crops.

By the end of the week 10,500 acres of sugar beets were planted of the 12,430 acres that have been signed up. The prospect for a beet crop this year is the best for several years.

Beyer June.

Huntley

The maximum temperature during the two-week period ending May 11 was 70 and the minimum 17°. There was 0.02 of an inch of precipitation.

As favorable weather prevailed during this period, spring seeding is well advanced on all parts of the project.

After the failure of the sugar beet growers and the Sugar Company to reach an agreement on a contract for the present season, the Company is offering to member growers a contract for 60 percent of their allotted acreage, which amount the grower can put out according to the agreement with the association. It is reported that so far about 14,000 acres of

Huntley (cont'd)

beets will be seeded under this arrangement. This is about one half of the acreage allotted to this factory district.

Station work during this period included preparing land and seeding beets, alfalfa, wheat, and oats in the rotation plots as well as seed-bed preparation for miscellaneous experiments and larger fields.

Dan Hansen.

Newlands

The average maximum temperature for the two-week period ending May 18 was 70.4, with a maximum of 80; the average minimum was 38.8, with a minimum of 31°. The mean temperature was 54.6°. The wind movement averaged 4.06 miles per hour. There was 0.03 of an inch of precipitation.

The cool spring weather has resulted in a slow growth of alfalfa and a favorable growth of grain crops.

The Lahontan Reservoir has steadily gained in the amount of water stored, the most recent recordings showing some 122,000 acre-feet. This is 20,000 acre-feet greater than the maximum storage of last year, which occurred during April.

The State is continuing its building program here at the station. The concrete silo, an important addition to the dairy plant, will be completed within the next few days. It will be 30 feet in height and 10 feet in diameter and have a capacity of 40 tons of silage.

Several F.E.R.A. laborers are still employed at the station, some of whom are putting up fences and repairing irrigation ditches and structures. The irrigation system is being put in first-class condition. The permanent station laborers have been engaged in leveling land, planting and caring for gardens, irrigating, and hauling manure.

Market prices: Butterfat, 27 cents a pound; beef 8 cents, lambs  $6\frac{1}{2}$  cents, and hogs 8 cents a pound.

E. W. Knight.

Prosser

The temperatures for the week ending May 11 were as follows: Maximum 73, mean maximum 69.3, minimum 29, mean minimum 37.6, and the greatest daily range 37°. The mean wind velocity was 4.23 miles per hour. The temperature dropped 29° on May 10, and it was necessary to heat the apple orchard.

In the crop rotation block 17 of the 19 corn plots were irrigated and planted. Iowa hybrid No. 939 was the seed corn used. Sugar beet plots were cultivated. Potato plots and roads were harrowed with the spring-tooth to eliminate weeds. A new seeding of alfalfa was irrigated the second time.

The only important change in the market prices of farm products was a decline of \$5 per ton in the price of No. 1 potatoes, which are now \$27 per ton in sacks, f.o.b. car.

The temperatures during the week ending May 18 were as follows: Maximum 73, mean maximum 69.3, minimum 33, mean minimum 40.7, and the greatest daily range 37°. The mean hourly wind velocity was 3.22 miles. The rainfall amounted to 0.01 of an inch.

Prosser (cont'd)

During the week thinning of sugar beets was started; the alleys and plot ends were cultivated. A variety of Yellow Madrid sweet clover was seeded on two of the four plots. The latter part of the week corn emerged on the corn plots.

Visitors at the station during the week were Dr. S. C. Vandecaveye, Messrs. Horner, Cassnelson, and Anderson--all of the Department of Agronomy, State College of Washington, at Pullman.

Carl A. Larson.

Scotts Bluff

During the week ending May 11 the average maximum temperature was 65, with a maximum of 85; the average minimum was 36, with a minimum of 25°. The wind movement averaged 7.7 miles an hour. The evaporation amounted to 0.171 inch. There was 0.16 of an inch of precipitation.

On May 10 storage in the Pathfinder Dam amounted to 146,250 acre-feet of water and in the Guernsey Dam to 26,680 acre-feet.

Moisture conditions throughout Nebraska, except in the south central and southeast portions, are exceptionally good.

During the week the south boundary of the station was fenced for pasturing sheep. Land was prepared for planting corn. The work on culverts in field E was completed. To date 174 gophers have been caught in traps; the number that have been poisoned is not known.

Since January 1 the Scotts Bluff section has shipped 1,777 carloads of lambs compared with 1,456 carloads last year and 1,809 carloads two years ago.

Dean W. W. Burr and Prof. J. C. Russel, of the University of Nebraska, and Mr. L. L. Zook, of the North Platte Field Station, visited this station on May 9.

The average maximum and the average minimum temperatures during the week ending May 18 were 52° and 40°, respectively. The maximum was 66° and the minimum 35°. The wind movement averaged 14 miles an hour. The average evaporation was 0.115 inch. Precipitation, ranging from 0.02 of an inch to 0.51 of an inch per day, occurred on every day of the week except one. The total was 1.41 inches. It has been cloudy all week.

The combined storage in the Pathfinder and Guernsey reservoirs on May 16 was 192,590 acre-feet. In the Centennial and Saratoga areas of the Pathfinder Dam watershed the prospects for water are good. In the Centennial the snow is heavy and well packed. In the Saratoga the water prospects are at least 25 percent better than last year. In the Encampment area the prospects are poor to fair. This information was obtained from a U.S. Weather Bureau report of "Snowfall in Elevated Regions of Wyoming."

All week it has been too wet for field work except one-half day on Thursday when the corn plots were planted in field K. Other station activities included moving potatoes in order to prevent sprouting, hauling manure to the Walker place, and pouring cement for checks in our irrigation system.

This week the Scotts Bluff section moved 70 carloads of lambs compared to 62 carloads last year and 54 carloads in 1933. Eggs are now selling for 21 cents a dozen.

Lionel Harris.

Umatilla

Weather conditions during the week ending May 11:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
81	35	58	None	5.6

The young alfalfa was given a third irrigation and the old alfalfa the second irrigation of the ~~season~~. Cool weather has held back the growth of all crops considerably.

The pipe line for the irrigation of the fruit orchard was completed. It has valves and distribution gates for each row.

B. F. Dana, Pathologist, Division of Fruit and Vegetable Crops and Diseases, spent the week on this station supervising the planting of crops to be tested for curly top. There will be under trial this year 61 varieties of beans, 43 miscellaneous cucurbits, 30 pure-line selections of Umatilla squash, and 99 varieties of tomatoes. These crops will be interplanted with sugar beets to attract leaf-hoppers to the testing grounds.

Other official visitors were D. E. Stephens and M. M. Oveson, of the Moro (Oregon) Experiment Station.

H. K. Dean.

## W E E K L Y R E P O R T S

Of The Division Of  
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 United States Department of Agriculture

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Vol. XXXVII

May 25 and June 1, 1935

No. 11

Belle Fourche

During the week ending May 25 the maximum temperature was 72 and the minimum 32°. The precipitation amounted to 1.40 inches.

All the corn was planted during the week. Other work included fencing pastures and general cleaning up.

The sheep were sheared and turned out to the various pastures. The average clip of wool per sheep was 8.06 pounds: the maximum was 11.4 pounds, and the minimum was 4.8 pounds. Some wool was contracted for at a price of 26 cents per pound.

During the week ending June 1 the maximum temperature was 69 and the minimum 39°. There were 1.93 inches of precipitation. The total precipitation for the month was 4.72 inches, which is 1.72 inches above the average.

During the week there was considerable rain in the headwaters of the Redwater and Belle Fourche Rivers, which will probably bring the inlet canal up to full capacity. At the present time about 77,000 acre-feet of water is in storage. No irrigation will be necessary now for another two weeks. Ample irrigation water is assured for all crops.

On account of rain very little field work was done during the week. All seed potatoes were treated with hot formaldehyde and cut. If weather conditions permit, they will be planted next week.

Beyer Aune.

Huntley

During the two-week period ending June 1 the total precipitation was 0.8 inch, the maximum temperature was 78 and the minimum temperature 34°. The total precipitation during the month of May was 2.91 inches, while the normal for the month is 1.99 inches. The total rainfall during the past three months has amounted to 6.93 inches as compared to an average precipitation of 4.08 inches for this period.

While frequent rains have delayed seeding, all crops are starting well, good stands are being obtained, and no irrigation has so far been necessary.

Having failed to reach an agreement with the Beet Growers' Association on a contract for the present season, the Great Western Sugar Company has accepted full beet acreage from non-member growers and from association growers up to one fourth of 60 percent of their entire land, which association members are allowed to contract for under their agreement with the Association. Under this arrangement it is reported that about 12,000 acres of sugar beets will be grown in this factory district. This is slightly less than one half the allotted acreage for the district. On the Huntley

Huntley (cont'd)

project about one thousand acres of beets are being grown this year. This is less than one fifth the acreage of former seasons. The acreage that has been withdrawn from sugar beet production is being used for plantings of small grains and beans.

Station work during this period included seeding of late grains, corn, beans, and potatoes.

Dan Hansen.

Newlands

During the two-week period ending June 1 the average maximum temperature was 76.8, with a maximum of 85; the average minimum was 45, with a minimum of 35°. The mean temperature was 60.9°. The wind movement averaged 3.76 miles per hour. There was 0.45 of an inch of precipitation.

The amount of water in the Lahontan Reservoir has increased each week since the opening of the irrigation season. At the present time it contains about 150,000 acre-feet. Recent rains in the mountains have caused an increased flow in the Truckee and Carson Rivers.

Seven men are still working as F.E.R.A. laborers. While most of the work being done by the State is about completed, there are some irrigation boxes, bridges, fences, and ditches to be constructed.

The permanent station employees have been engaged in leveling land, irrigating, cultivating corn and the garden, and cleaning ditches. The leveling is being done on 20 acres on the north side of the station. This, one of the ruggedest areas on the station, was roughly leveled last winter as a relief project. A great deal of work is yet to be done before this area is ready for planting.

In the chemical laboratory Mr. Moon has been engaged in analyzing a full set of well samples covering the underground water studies at this station. Much of this work has been conducted at monthly intervals for several years. A great deal of data have been gathered.

Market prices: Butterfat, 28 cents a pound; beef 8 cents, lambs 6 cents, and hogs 8 cents a pound.

E. W. Knight.

Prosser

Temperatures during the week ending May 25 were as follows: Maximum 84, mean maximum 76.7, minimum 34, mean minimum 39.8, and the greatest daily range 41°. The mean wind velocity was 2.05 miles an hour.

Work during the week was concentrated upon the crop rotation series. Two plots of sweet clover were seeded the first of the week. Thinning of sugar beets was continued, and the alfalfa was given the third irrigation. A worn-out flume on field F-1 is being replaced. Water for this field will come through the third and fifth series flume in the rotation. This arrangement will eliminate about 300 feet of flume. Road culverts were put in along the west side of the rotation block.

Temperatures during the week ending June 1 were as follows: Maximum 83, mean maximum 75.3, minimum 40, mean minimum 48.1, and the greatest daily range 40°. The mean wind velocity was 2.16 miles an hour. The rainfall amounted to 0.06 of an inch.

During the week the wheat plots in the rotations were irrigated the

Presser (cont'd)

second time, and potato plots were irrigated in preparation for planting.

The season is late this year as indicated by shipments of produce from the valley. Last year during the week ending May 30 79 carloads of asparagus were shipped, but this year only 20 carloads have been shipped.

Carl A. Larson.

Scotts Bluff

During the week ending June 1 the average maximum temperature was 61, with a maximum of 78; the average minimum was 45, with a minimum of 40°. The wind movement averaged 12.2 miles an hour. The average daily evaporation was 0.163 inch. There was 1.68 inches of precipitation.

The 25-year average (1910-1934) precipitation for May at this station has been 2.62 inches. This year the precipitation for May was 4.18 inches. In only two other years of the 25-year period has the precipitation been higher for May: in 1917 it was 5.20 and in 1918 it was 4.26 inches. The rains falling gently this year soaked into the soil. Irrigation water will not be needed for two or three weeks even if there is no additional rain during that time.

Extremely heavy rains in parts of Colorado, Wyoming, and Nebraska caused the water in the North Platte, the South Platte, and the Republican Rivers in Nebraska to rise to flood proportions. The level of the North Platte River rose 4 feet. Several families, who during the past few dry years had tilled the soil on islands in the river, were removed to safety on higher ground; and all bridges across main highways were guarded as the torrents of water passed by.

On May 31 the combined storage in the Pathfinder and Guernsey Reservoirs amounted to 282,470 acre-feet of water. The inflow into the Pathfinder was 5,087 second-feet and into the Guernsey 6,803 second-feet.

On May 28 five Duroc-Jersey sheep, having a total weight of 550 pounds, were put on alfalfa pasture in rotation 65. Except for plowing the alfalfa plots that are to be planted to potatoes, field work has been prevented by rain. Some cabbage and cauliflower plants for a variety test were transplanted to the field on May 31.

Owing to the reduction in the acreage of sugar beets, the Great Western Sugar Company announced that its factory at Mitchell would be closed on June 8.

Lionel Harris.

Umatilla

Weather conditions during the week ending May 18:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
80	37	59	0.02	4.1

Station activities consisted of irrigating, cutting, and hauling hay from the alfalfa variety test, and weeding. The missing tomato plants in the curly-top test, Pyrethrum, and Artemisia were replaced with new plants.

Umatilla (cont'd)

Weather conditions during the week ending May 25:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean		
90	39	63.4	None	4.2

All new seedings were irrigated, as well as small crops. B. F. Dana, who conducts the curly-top work on this station, and V. R. Boswell, of the Division of Fruit and Vegetable Crops and Diseases, visited the station.

B. F. Dana and the Superintendent made a trip into the Pasco and Kennewick districts with a view to ascertaining the extent of tomato plantings there this year. Plantings there are somewhat late, and a great number of hoppers were observed. A considerable number of hoppers have migrated from the desert to the station and are feeding on tomatoes, beans, and squash.

H. K. Dean.

Yuma

During the two-week period ending May 18 the maximum temperature was 95, mean maximum 89, minimum 47, mean minimum 52.7, and the mean  $70.8^{\circ}$ . There was no precipitation. The wind velocity averaged 2.2 miles per hour.

Subnormal temperatures and high winds have combined to make weather conditions unfavorable for cotton planting, so that replanting has been necessary in most sections of the Southwest. An irrigation has been given in many cases to improve stands. Where satisfactory stands were obtained from early plantings a subsequent infestation of army and wireworms has ruined the fields. Late plantings, insect damage, and weeds have resulted in a crop condition that is approximately 75 percent of normal.

Cool weather and aphis injury caused a light second cutting of alfalfa on the project. Hay prices have gone up to \$14 baled or \$12 per ton loose in the field. Higher yields than normal are reported from wheat and barley crops. Wheat is selling for \$1.15 per cwt. and barley at 90 cents a cwt.

Station work during this period included threshing wheat and barley; cutting the second crop of alfalfa; planting, cultivating, and hoeing cotton; manuring and plowing grain stubble plots; threshing vetch and peas; general irrigating and cultivating.

All relief labor work at the station was discontinued May 15 on account of lack of material.

During the two-week period ending June 1 the maximum temperature was 100, mean maximum 94.4, minimum 48, mean minimum 56.2, and the mean  $75.3^{\circ}$ . No precipitation was recorded. For the month of May the mean temperature was  $71.8^{\circ}$  compared to  $78.8^{\circ}$  in 1934.

The cool weather has delayed to some extent the cotton and cantaloup crops, but has been beneficial to alfalfa, citrus fruit, strawberries, and early tomatoes.

Cotton plantings on the project for 1935 aggregate 12,500 acres. This is approximately the same acreage that was planted in 1934. The varieties grown together with their percentages of the total acreage are as follows: Stoneville 40%, Mebane 40%, Acala 19%, and Pima 1%.

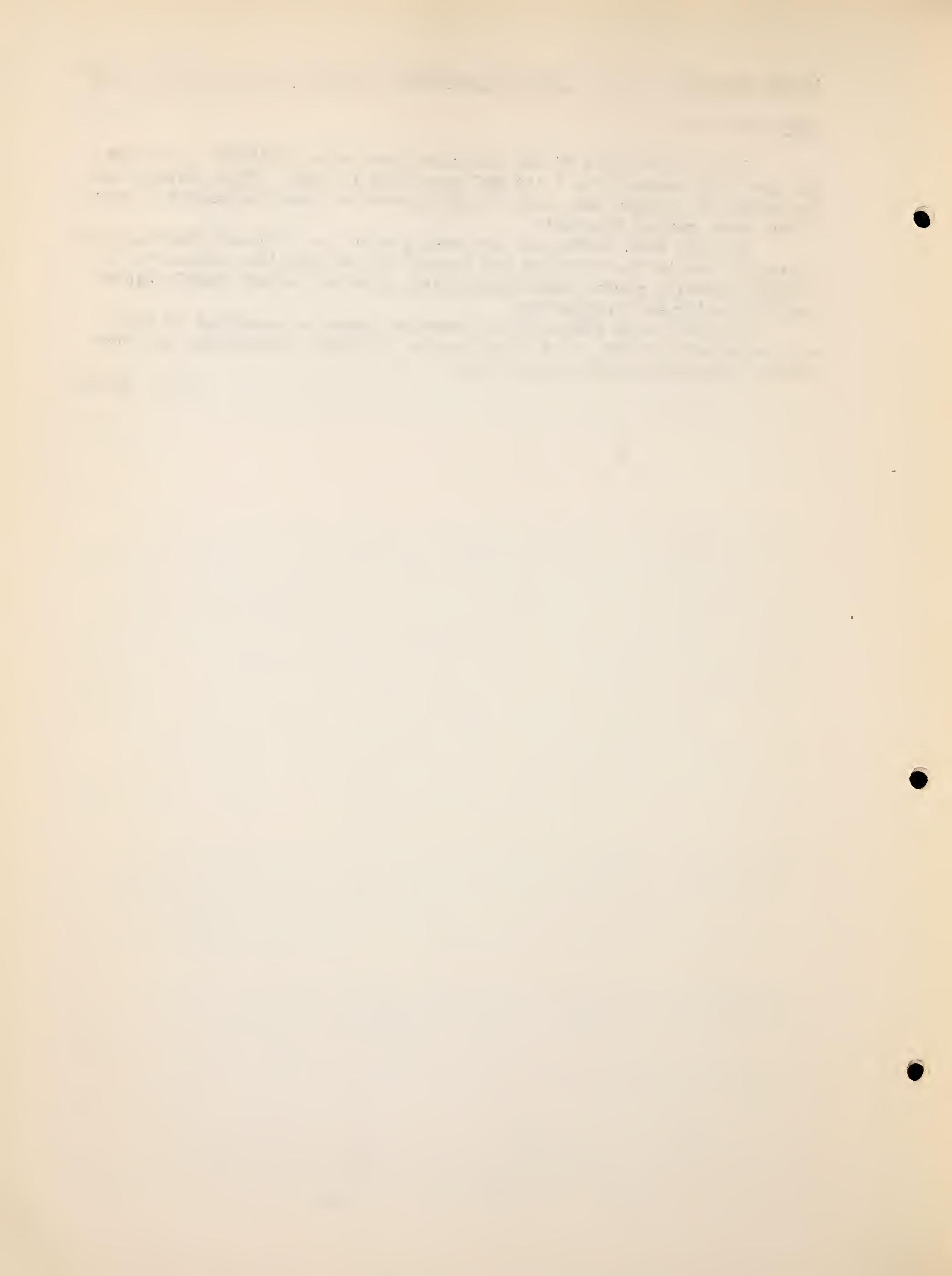
Yuma (cont'd)

Data on the flow of the Colorado River show 1,345,000 acre-feet for May 1935 compared to 1,113,000 acre-feet in 1934. With storage taking place at Boulder Dam, only 514,000 acre-feet were released for down-river needs during the month.

Station work during the two-week period has included thinning and hoeing cotton in the rotation and variety tests, planting cotton on the date-of-planting plots, threshing barley, plowing barley stubble plots, general hoeing and irrigating.

Fourteen high offshoots of assorted imported varieties of dates were received from the U. S. Date Garden at Indio, California, and were planted in nursery rows for rooting.

E. G. Noble.



## W E E K L Y R E P O R T S

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June 8 and 15, 1935

No. 12

Belle Fourche

During the week ending June 8 the maximum temperature was 68°, the minimum temperature 32°, and the precipitation 0.36 of an inch. The mean temperature for May was 49°, which is the lowest on record. The average mean for May is 54°.

The Orman Reservoir now contains approximately 85,000 acre-feet of water. This is an increase of 8,000 acre-feet during the past week.

The potato plots in field A were duckfooted and the potatoes were planted. The maximum production plot and the variety test of potatoes were also planted. The variety test of flax was planted in field G. The hoeing and cultivation of sugar beets were started in all the fields. All of the beet plots show a good stand.

Beyer Aune.

Newlands

During the two-week period ending June 15 the average maximum temperature was 85.5, with a maximum of 92; the average minimum was 45, with a minimum of 37°. The mean temperature was 65.3°. The wind movement averaged 3.1 miles per hour. There was no precipitation.

The F.E.R.A. projects at the station, which will be completed within the next ten days, include the following improvements: The construction of a 33' x 10' concrete silo, a 14' x 48' hog farrowing pen, 32' x 48' concrete hog feeding floor, a 15' x 25' concrete manure pit, two concrete drinking troughs, a calf shelter, a new foundation for platform scales, 1500 feet of newly laid water mains, about one mile of fences built, whitewashing fences, making a new map of the entire station area, new horse corrals, putting up three bridges, laying numerous irrigation boxes, cleaning ditches, etc.

Hay is bringing \$8 per ton. Haying has commenced on some ranches and will be in full swing in a few days. The indications are that fair yields will be obtained from the first cutting.

At the present time the Lahontan Reservoir contains over 160,000 acre-feet of water. Storage is showing a steady gain in the face of heavy withdrawals, and it appears that the supply of water will be more abundant than for a number of years. The storage last year at this time was less than 50,000 acre-feet and was steadily falling.

Some assistance has been given to the investigators of the Federal Government who are classifying lands in connection with the rural resettlement program. To date no purchases of marginal lands have been made, but the preliminary work is about completed.

E. W. Knight.

Prosser

Temperatures for the week ending June 8 were as follows: Maximum 92, mean maximum 83.7, minimum 37, mean minimum 49.6, and the greatest daily range 45°. The mean hourly wind velocity was 2.88 miles.

The Yakima River is at flood stage, but has not overflowed its banks. The reservoirs of the Bureau of Reclamation have been filling steadily and at the end of the week more than 922,000 acre-feet of water was impounded. This is very near the capacity of the reservoirs.

Potatoes were planted on the rotation block the first of the week. The corn at head ends of the series was cultivated. The major work on the station was preparing the experimental work for exhibition on Field Day, which will be held June 12. A memorial in the form of a concrete drinking fountain has been constructed and a plaque placed thereon in memory of Ina P. Williams, a legislator who introduced the act in the State Legislature of 1917 creating the Irrigation Branch Experiment Station.

Cattle prices declined 50 cents a cwt. and are now \$7.50 a cwt. At the end of the week the price of potatoes declined \$5 per ton and are now \$18 per ton f.o.b. car.

Harry Katzenelson, research student at Washington State College, visited the station on Saturday in connection with sampling alfalfa for bacteriophage.

Temperatures during the week ending June 15 were as follows: Maximum 81, mean maximum 74.7, minimum 43, mean minimum 49.8, and the greatest daily range 34°. The rainfall was 0.26 of an inch. The mean hourly wind velocity was 2.25 miles.

Work on the rotation block during the week included the hoeing of corn and sugar beets and irrigation of sugar beets and alfalfa. The re-seeded sugar beet plots are in a very poor condition. Sugar beet variety accession 34 looks very promising in the variety trial plots. The old German sugar beet variety is in a very poor condition and most of the plants are dying. The U.S. No. 1 variety does not look so good as accession 34. Leaf hoppers are very numerous on all of the sugar beet plants.

The Fifteenth Annual Field Day was held on June 12. Approximately 125 people attended. After the field trips and lunch, the memorial plaque to Ina P. Williams was unveiled and dedicated. The Washington Irrigation Institute and the Women's Clubs of the Yakima Valley took an active part in this program. Mr. E. F. Benson presided, and Mr. H. P. Singleton, Superintendent of the Irrigation Branch Experiment Station, gave the address of welcome. The principal address of the occasion was made by Mr. Guy C. Finley, of Yakima. Dean Edw. C. Johnson and Mr. Ben Perham spoke in regard to the investigational work and accomplishments of the station. Mrs. Williamson, of Prosser, spoke on "The Place of Woman in Our Civic and Political Life." A thunder shower occurred just before the program started and there was another shower following the program.

During the week top prices of beef cattle declined 50 cents per cwt. and are now \$7 per cwt. Top hog prices are now \$9.25 per cwt. U.S. No. 1 potatoes declined \$5 per ton and are now \$13 per ton in sacks f.o.b. car.

Carl A. Larson.

Scotts Bluff

During the week ending June 8 the average maximum temperature was 62, with a maximum of 72; the average minimum was 42, with a minimum of 36°. The wind movement averaged 9.1 miles an hour. The average evaporation was 0.206 inch. There was 0.67 inch of precipitation.

On June 7 the Pathfinder and Guernsey Reservoirs held 327,070 acre-feet of water. The inflow into the Pathfinder was 3,530 second-feet and into the Guernsey 1,634 second-feet.

The first part of the week tomato plants for a variety test were transplanted to the field. Cold wet soil has caused much of the melon and squash seed planted last month to rot. It will be necessary to re-plant these crops.

All potato ground is ready for planting. On June 8 Dr. H. O. Werner, of the University of Nebraska, and Mark Koehnke, Certification Manager of the Nebraska Potato Growers' Association, visited the station in the interest of potato research work. While here Dr. Werner planted a variety test of potatoes.

Mr. Bowen is still supervising the work of building checks in the irrigation system in field K.

Prospects for a large potato crop in the dry land region near Alliance are very good. A large acreage is being planted to potatoes in the North Platte Valley.

The number of farms in Scotts Bluff County increased 10 percent from 1930 to 1935.

Butterfat in milk is now bringing 32 cents a pound.

During the week ending June 15 the average maximum temperature was 77, with a maximum of 90; the average minimum was 59, with a minimum of 47°. The wind movement averaged 7.6 miles an hour. There was 0.72 of an inch of precipitation.

On June 13 the water stored in the Pathfinder and Guernsey Reservoirs amounted to 404,550 acre-feet. The inflow into the Pathfinder was 7,957 second-feet and into the Guernsey 1,078 second-feet.

On June 10 a heavy hailstorm broke windows in houses in Mitchell and severely damaged crops and trees. At the station the hail was light. The alfalfa was damaged slightly and some tomato plants were killed.

Potatoes have been planted in fields K and E, and planting was begun on the increase seed stock of the Nebraska Potato Growers' Association. Dr. H. O. Werner began a twin-row planting test, and Mr. Mitrofan Afanasien, Research Assistant under Dr. R. W. Goss, planted seed for a seed treatment test in order to determine the value of various chemical treatments in the control of scab and rhizoctonia.

The sugar beets have been cultivated and the thinning process is well under way. Black root damage is slight despite the rainy weather.

A 60 percent loss in the Nebraska apple crop due to the ravages of stem disease has been forecast by W. B. Banning, State Director of Agriculture.

Butterfat is selling at 32 cents a pound and eggs at 21 cents a dozen.

Lionel Harris.

Umatilla

Weather conditions during the week ending June 1:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
87	52	67.7	0.12	7.8

The feed canal water was discontinued, and fittings and meter were removed from the feed canal pump-house to the "A" canal pump-house. Miscellaneous work during the week consisted of cultivating, hoeing, and repairing pasture fences.

On June 1 18 boys and girls of the local calf clubs spent the afternoon at the station with their leaders. A summary of the dairy work was presented to them, and they judged a herd of dairy cows.

Weather conditions during the week ending June 8:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
97	44	70.9	None	4.8

During the week the entire station was given an irrigation. M. C. Lane and E. W. Jones, of the Bureau of Entomology Wireworm Laboratory at Walla Walla, visited the station and investigated what promises to be a rather serious outbreak of white grubs, the larva stage of the so-called May or June beetle. On one of the farms visited the pest was so serious that it had completely eradicated half an acre of alfalfa and was doing serious damage to the wheat crop. The grubs were found rather widely distributed where stops were made to ascertain if they were present.

H. K. Dean.

Yuma

The maximum temperature for the two-week period ending June 15 was 113, mean maximum 106.3, minimum 58, mean minimum 63.6, and the mean 84.9°. There was no precipitation.

Temperatures higher than normal during the first week of June have been favorable for forcing along the cotton plantings. In some sections insect damage is still reported. Cutworms, which reduce the stands, are doing the most damage.

The third cutting of alfalfa on the project is being harvested, with yields above normal reported. The first two crops this season were light on account of cool weather and insect damage. Alfalfa being grown for the production of seed is past the full-bloom stage, with present indications of a normal yield of seed.

Plantings of corn and milo for summer grain are being made. Wild hemp is being sown for a green manure crop on land to be used for lettuce this fall. Cantaloups and watermelons are being marketed at the rate of 20 carloads per day. Cantaloups are bringing about \$1.50 per standard crate.

For the past two weeks an excess of water has been released at Boulder Dam on account of the rapid rise in the storage reservoir. Probable interference with unfinished work on the dam is reported to be the reason for decreasing the storage rate. Approximately 12,000 second-feet is the rate of flow of the Colorado River at Yuma, whereas the discharge into the reservoir at Boulder Dam is 45,000 second-feet.

Yuma (cont'd)

Station work during the period has included cutting alfalfa, plowing under sweet clover on the rotation plots, cultivating and hoeing cotton, cleaning borders and roadways.

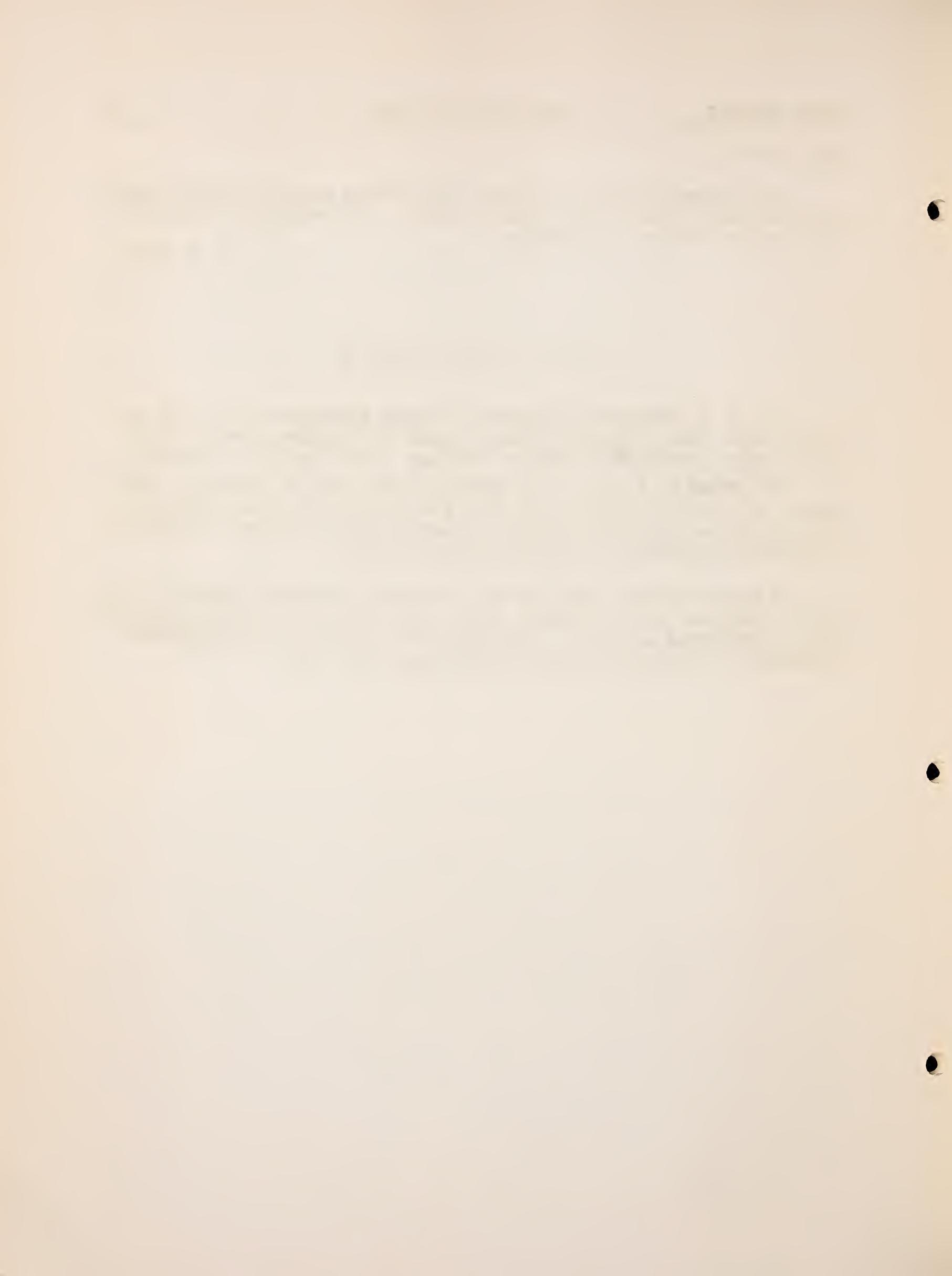
E. G. Noble.

**M I S C E L L A N E O U S**

Mr. S. H. Hastings is planning to leave Washington on June 28 for a field trip. His itinerary includes points in Nebraska, Nevada, Utah, Idaho, Oregon, Washington, Montana, Wyoming, South Dakota, and Colorado.

Dr. Frank M. Eaton, of the Rubidoux Laboratory at Riverside, California, will meet Mr. Hastings at Salt Lake City, Utah, from which point they will proceed together, making a special study of salinity conditions on irrigation projects in several different States.

A paper entitled "Salinity of Irrigation Waters and Injury to Crop Plants", prepared by Dr. Frank M. Eaton, was read by him to the Lemon Men's Club of California on June 5. This paper will appear in THE CALIFORNIA CITROGRAPH in the issues of July 20 and August 20, 1935.



## WEEKLY REPORTS

 Of The Division Of  
 WESTERN IRRIGATION AGRICULTURE  
 Bureau of Plant Industry  
 United States Department of Agriculture

(Not for publication without the prior consent of this Division.)

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Vol. XXXVII

June 22 and 29, 1935

No. 13

Huntley

During the week ending June 29 the maximum temperature was 92 and the minimum  $40^{\circ}$ . The precipitation was 0.08 inch. The total rainfall during June was 0.98 inch as compared with a normal of 2.14 inches.

The season so far has been rather cool, and crops are not advanced as much as usual at this time of year. Hay harvest is under way in most parts of the valley, but the crop is reported to be light on many farms due to cool weather and poor stands resulting from winter injury.

Crops are being damaged to some extent in most local areas by grasshoppers, and poisoned bait is being supplied by Federal and local government agencies.

Station work included harvesting the first cutting of alfalfa and irrigating grains.

Dan Hansen.

Newlands

During the two-week period ending June 29 the average maximum temperature was 89, with a maximum of 96; the average minimum was 48.1, with a minimum of  $43^{\circ}$ . The mean temperature was  $68.6^{\circ}$ . The wind movement averaged 3.61 miles per hour. There was no precipitation.

The first crop of hay is being harvested at the station. The hay over the entire project is much heavier than usual. This is credited to the water shortage of last year. The underground water table was reported to have been much lower than usual due to the small amount of water available for irrigation purposes during 1934. The lower water table probably accounts for some of the heavier yields, but the lowering of the water table should not be credited to the use of less water by the farmers but rather to less water in the canals, which resulted in less seepage.

Grain crops on the project are also heavier than usual. The unusually cool, damp spring has been the contributing factor in the improved appearance of these crops. However, the cool spring and continued temperatures below normal are not favorable to the corn crop. A few acres planted to silage will probably mature enough for feed, but the corn grown for grain will be hard pressed to mature unless the remaining months of summer have higher temperatures, especially at night.

The F.E.R.A. projects on the station have been completed. Other station work has consisted of hoeing corn, irrigating, cleaning ditches, and hauling manure.

Mr. L. H. Mitchell, of the Bureau of Reclamation, visited the station on June 27 while investigating conditions on this project, particularly the methods of using irrigation water.

E. W. Knight.

Prosser

Temperatures during the week ending June 22 were as follows: Maximum 90, mean maximum 81, minimum 40, mean minimum 47.6, and the greatest daily range 46°. The mean hourly wind velocity was 2.09 miles. The evaporation was 1.635 inches.

The annual conference of the Western Section of the American Society of Agronomy was held during the week at Pendleton, Oregon. The conference this year was a symposium on wheat.

Thinning corn in the plots in the rotation was started during the week. There is a good stand of potatoes on all the plots in the various rotations, and they were cultivated for the first time during the week.

The sugar beet acreage originally contracted for by the Utah-Idaho Sugar Company amounted to 3,000 acres, but owing to crop failures this acreage was reduced to approximately 2,800. The beets that were planted during the first part of March and suffered no frost damage are showing good growth. Late plantings and reseeded fields are making much poorer growth than the early seeded ones and also show some wilt damage. Sugar beet fields near Sunnyside that are infested with wireworms are being damaged considerably. In the first place it is difficult to get a stand of beets and in the second place beets 1 to 2 inches in diameter are being killed by the wireworms.

The temperatures during the week ending June 29 were as follows: Maximum 91, mean maximum 79.5, minimum 39, mean minimum 51, and the greatest daily range 36°. The rainfall amounted to 0.02 of an inch. The mean wind velocity was 1.67 miles per hour. The evaporation was 1.391 inches.

Work on the rotation included irrigating and hoeing sugar beets and irrigating corn. The first crop of alfalfa was cut and put in the shock. Late potatoes were planted in field A-4, concluding the potato planting for this year.

Market prices: Choice steers, lambs, and hogs, \$6.50, \$5, and \$9.25 per hundred, respectively; new potatoes in sacks, \$12 per ton; the first offering of new potatoes, \$20 per ton; butterfat,  $22\frac{1}{2}$  cents per pound.

B. B. Bayles, Associate Agronomist of the Division of Cereal Crops and Diseases, visited the station during the week.

Carl A. Larson.

Scotts Bluff

During the week ending June 22 the average maximum temperature was 71, with a maximum of 85; the average minimum was 50, with a minimum of 40°. The wind movement averaged 6.7 miles an hour. There was 0.41 inch of precipitation.

On June 21 the combined storage of water in the Pathfinder and Guernsey Reservoirs amounted to 531,580 acre-feet. The inflow into the Pathfinder was 6,292 second-feet and into the Guernsey 448 second-feet.

Station activities included thinning beets, cultivating corn, weeding, and planting potatoes. The potatoes planted included strains of the Potato Association and a suberizing test outlined by Dr. H. O. Werner.

Butterfat production in Nebraska increased somewhat during May because of good pasture conditions. The crop outlook in western Nebraska, except in localized areas suffering from hail damage, looks very promising. Hail damage has been rather severe in many places throughout the State.

Poison is being distributed free to farmers in this county to combat attacks of grasshoppers, which, fortunately, are not very numerous this year.

Scotts Bluff (cont'd)

During the week ending June 29 the average maximum temperature was 78, with a maximum of 86; the average minimum was 52, with a minimum of 42°. The wind movement averaged 8.1 miles an hour. There was 0.26 inch of precipitation.

On June 28 the Pathfinder and Guernsey Reservoirs held 548,940 acre-feet of water. The inflow into the Pathfinder was 3,876 second-feet and into the Guernsey 2,590 second-feet.

During the week the first cutting of alfalfa hay was put in the stack. The hay is of high quality. The average yield from the plots in field K was 1.88 tons per acre. The maximum yield was 2.41 tons per acre and the minimum yield was 0.67 ton per acre.

The thinning of sugar beets has been completed. Most of the corn under irrigation has been cultivated. Head ditches have been plowed for handling irrigation water in field K. The water will be delivered to the fields on June 30. At this time no crops are suffering for water. To continue good growth, however, the small grain crops and alfalfa must soon be irrigated. Black stem rust is nullifying the early fine prospects for a large wheat crop in Nebraska.

Butterfat is selling for 32 cents a pound and eggs for 22 cents a dozen.

Lionel Harris.

Umatilla

Weather conditions during the week ending June 15:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
87	51	68.1	0.30	6.6

Most of the first crop of hay was harvested during the week. A new stacker with unloader on an overhead cable was installed. This stacker will permit the stacking of approximately 75 tons of hay at the dairy barn.

The first crop of Pyrethrum flowers from the bed established last fall was harvested. The growth has been extremely irregular, some plants bearing a nearly normal flower crop, while others are only 5 or 6 inches high and show no signs of blossoming.

Miscellaneous work included weeding and cultivating, and cleaning corrals. The Superintendent and Mr. Zivney, accompanied by the Rural Rehabilitation Supervisor, attended the field day at the Prosser Station. H. E. Cosby, Extension Poultry Specialist, Oregon Agricultural College, visited the station on June 15 to plan and inaugurate turkey experiments for this year.

Weather conditions during the week ending June 22:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
94	47	69.5	None	6.7

Plants of Artemisia cina which were not large enough to distribute were planted in the coldframes so they could be given closer attention than in the field. Alfalfa fertilizer and winter-killing plots were harvested. Lots were prepared for the turkey experiments in the alfalfa field east of

Umatilla (cont'd)

the station buildings. A general irrigation was given all small crops and most of the alfalfa. Messrs. Singleton, Larson, and Sackett visited the station.

Weather conditions during the week ending June 29:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
95	46	71.1	0.05	6.4

The normal mean wind velocity for June during the 23-year period that the station has been established is 3.5 miles per hour. Since the station was moved to the new site the June means have been 6.0 for 1932, 3.1 for 1933, and 5.0 for 1934. This year a new high was established at 6.7 miles per hour, one of the four windiest months in the history of the station. On two consecutive days the average was over 15 miles per hour, and on five other days the average was between 10 and 15 miles per hour.

For the turkey experiments this season 268 turkeys were weighed into three lots of 100 each and one lot of 68. Lot 1 will be fed the L. E. Cline mash formula and adjusted amounts of scratch. Lot 2 will be fed mash and a slight modification of the recommended high-protein formula of this station. Lot 3 will have a scratch mixture of wheat, corn, and barley, with liquid skim-milk. This lot will be used as a standard to test the varying amounts of protein in the other rations, and to check on the method quite frequently used by growers of small flocks. Lot 4 will have a low-protein mash and scratch.

On June 28 the Extension Service of the Oregon Agricultural College held at the station a conference in which eight assistant and emergency county agents, the Vice-Director of Extension, Assistant County Agent Leader, and the dairy and animal husbandry specialists participated. The State Leader of Rural Rehabilitation and the Supervisor for this district also attended. During the morning an intensive outline of the work of this station was given, and in the afternoon a tour of the fields was made. The rest of the time was occupied on administrative questions and outlining of work by the specialists.

General work during the week consisted of cleaning ditches and chopping weeds.

R. S. Besse, Vice-Director of the Oregon Experiment Station, spent some time at this station while on a trip visiting the branch experiment stations in eastern Oregon.

The curly-top disease of vegetables this season is unusually severe with indications at this time that it will be practically as bad as last year, when it was the most severe since the station started curly-top work. The sugar beets used as an intercrop to attract the hoppers were a complete failure.

H. K. Dean.

Yuma

During the two-week period ending June 29 the maximum temperature was 110, mean maximum 105.6, minimum 57, mean minimum 62.6, and the mean  $84.1^{\circ}$ . There was no precipitation.

Yuma (cont'd)

For the month of June the mean temperature was  $3.1^{\circ}$  above normal and  $6.6^{\circ}$  warmer than June 1934. During the last week of the month temperatures were below normal. This cooler weather has been of some benefit to most crops. Cotton is growing slower than usual but is putting on an excellent bottom crop.

The cantaloup crop reached the peak of the shipping period during the last week in June, with 60 carloads per day moving to market. The late-season price has dropped to 90 cents per crate.

The discharge of the Colorado River for June was 4,034,000 acre-feet. In June 1934 it was only 550,000 acre-feet. The amount of water released at Boulder Dam during June was 1,357,000 acre-feet, indicating approximately 3,750,000 acre-feet in storage at that point. This is sufficient for all irrigation needs in the downstream sections this year.

Station work during this period has included planting corn plots in the rotations, plowing and leveling plots for grain sorghums, roguing cotton fields; hoeing cotton plots, alleys, and borders; general irrigating and cultivating.

Mr. R. E. Blair, Statistician, Division of Crop and Livestock Estimates, Bureau of Agricultural Economics, of Sacramento, California, visited the station on June 19.

E. G. Noble.



## W E E K L Y R E P O R T S

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Vol. XXXVII

July 6 and 13, 1935

No. 14

Belle Fourche

During the week ending July 6 the maximum temperature was 101 and the minimum 52°. The precipitation amounted to 0.09 inch.

Irrigation has been continuous since June 27 when water was turned into the irrigation system. Although the rainfall in June was very nearly an inch below normal, frequent showers and rather cool weather caused a heavy growth of crops. Due to the lateness of turning water into the irrigation system, it has been next to impossible to get all the crops irrigated before they were damaged some by rather extreme heat.

During the week ending July 13 the maximum temperature was 96 and the minimum 52°. There was 0.07 inch of precipitation.

The station work consisted of irrigating and getting ready for the annual farm picnic on July 13. The weather was ideal; and 997 cars and one horse and buggy were checked in during the day.

On July 12 a judging school for the 4-H Club Boys from five surrounding counties was held here at the station. Some 40 boys attended this school and stayed over night to attend the farm picnic the next day.

Beyer Aune.

Newlands

During the two-week period ending July 13 the average maximum temperature was 84.9, with a maximum of 100; the average minimum was 46.8, with a minimum of 39°. The mean temperature was 65.8°. The wind movement averaged 2.88 miles per hour. There was 0.13 of an inch of precipitation.

July weather remained below normal in temperature until July 12 when a decided rise in the maximum temperatures occurred, and recordings around 100° F. have continued since that date. These temperatures have caused a very rapid growth of alfalfa following the first crop haying.

The first crop of alfalfa on the Newlands project this year was a very heavy one. Farmers are reporting the largest yield in years. Hay was harvested on the station from 16 acres, with an average yield of  $1\frac{1}{2}$  tons to the acre. In many places yields exceeding this have been obtained. One field, the hay from which was purchased by the State, slightly exceeded 2 tons to the acre.

In addition to first crop haying at the station, cultivating corn, mowing ditch banks and roadways, and irrigating have kept the station field force busy.

Mr. S. H. Hastings visited the station on July 5, 6, and 7, during which time he conferred with Messrs. Headley and Spencer, of the Nevada

Newlands (cont'd)

Agricultural Experiment Station. Plans for a field phosphate experiment were discussed. Mr. Spencer has been engaged for sometime in comparing the relative availability of organic and inorganic phosphates as plant foods. To date these experiments have dealt with sources of organic phosphate and its use in pot culture work. The stage has been reached where field experiments are necessary, and it is proposed to conduct these at this station.

E. W. Knight.

Prosser

Temperatures for the week ending July 6 were as follows: Maximum 82, mean maximum 74.5, minimum 40, mean minimum 45.5, and the greatest daily range 38°. The mean wind velocity was 1.54 miles per hour. The total evaporation was 1.323 inches.

The supply of stored irrigation water is slowly beginning to decrease. On July 6 923,500 acre-feet was in storage. The supply of water in the Yakima River at Prosser has now decreased to low water volume.

The alfalfa plots on the rotation block were clipped in order to keep down the weeds. Other work on the rotation included the completion of corn irrigation, cultivation of potato plots, and the weeding of alleys and flume lines.

Temperatures during the week ending July 13 were as follows: Maximum 101, mean maximum 86.1, minimum 45, mean minimum 52, and the greatest daily range 41°. The mean hourly wind velocity was 1.88 miles. Precipitation was 0.07 of an inch. Evaporation was 1.705 inches. A hot wind blew from the northeast at the end of the week causing the temperature to rise above 100° and increasing the evaporation to 0.460 inch in 24 hours.

In the orchard irrigation plots 72 soil samples were taken at trees where assimilation and transpiration studies are being made on plots 1-a, 2-a, and 3-a. On the rotation block alfalfa was irrigated, potatoes were hoed and cultivated, and alleys and roads were cultivated.

Farmers contracting for sugar beet acreage near Sunnyside, where wire-worm damage to sugar beets was great, have petitioned the company to abandon their acreage in order to receive some benefit from the acreage reduction program.

Carl A. Larson.

Scotts Bluff

The average maximum temperature during the week ending July 6 was 87, with a maximum of 90; the average minimum was 57, with a minimum of 49°. The wind movement averaged 7 miles an hour. There was 0.08 inch of precipitation.

On July 5 water stored in the Pathfinder and Guernsey Reservoirs amounted to 513,360 acre-feet. The inflow into the Pathfinder was 1,963 second-feet and into the Guernsey 4,989 second-feet. On the basis of present figures one acre-foot of water an acre will be available to farmers under Government ditches, according to T. W. Parry, Manager of the Pathfinder Irrigation District.

The first irrigation water of the season was delivered to the station on June 30. It was run continuously during the week on the grain plots in fields K and E, all of which were irrigated. The grain is now

Scotts Bluff (cont'd)

advancing into the milk stage and will not need more irrigation water for proper maturity. Other station activities included cultivating corn and weeding sugar beets.

The late potato crop has been planted under conditions which indicate one of the best production years since potatoes became a major crop in this section.

A cloudburst accompanied by hail in the Gering Valley resulted in approximately \$100,000 damage to highways and crops on June 30.

Mr. Hastings visited the station on July 2, 3, and 4. He had a conference here on July 3 with Dean Burr.

During the week ending July 13 the average maximum temperature was 87, with a maximum of 95; the average minimum was 60, with a minimum of 59°. The wind movement averaged 5.7 miles an hour. The average evaporation was 0.300 inch. There was 0.51 of an inch of precipitation.

On July 11 the water stored in the Pathfinder and Guernsey Reservoirs amounted to 462,190 acre-feet. The inflow into the Pathfinder was 1,023 second-feet.

Water has been run continuously during the week on the alfalfa plots in field K and on the large alfalfa and grain fields. The corn has been cultivated once and a start made on the second cultivation. The spring-seeded alfalfa plots have been cut in order to control weed growth.

The first weeding of the sugar beet and bean plots has been completed.

Prof. H. P. Davis, of the Division of Dairy Husbandry, University of Nebraska, visited the station July 9. He took pictures of the pure-bred cows and culled out 9 head. The dairy industry in the Scotts Bluff area is growing steadily.

It has been necessary to spray a large portion of the early potato crop in the valley because of the ravages of potato bugs.

Lionel Harris.

Umatilla

Weather conditions during the week ending July 6:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
85	50	65.2	0.02	7.3

Work during the week consisted of irrigating, cleaning ditches, hoeing miscellaneous crops, and haying.

Weather conditions during the week ending July 13:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
105	63	72.4	0.05	4.9

Work on the station consisted of irrigating, weeding, and haying.

W. A. Schoenfeld, Director of the Oregon Agricultural Experiment Station, made a brief visit.

H. K. Dean.

Yuma

During the two-week period ending July 13 the maximum temperature was 110, mean maximum 102, minimum 59, mean minimum 65.5, and the mean 84°. There was a trace of precipitation.

While the weather has been normal for this time of the year, the minimum temperatures have ranged from 59 to 82°. Sleep was practically impossible during the hot nights as the humidity was very high. There have been thunder showers in the vicinity, but only a trace of rain fell at the station on the 12th and 13th.

The sugar beet seed was harvested during this period. The warm fall and winter produced interesting results: only 8 beets produced seed out of the 27 60-foot rows of the selections made since 1930, while 90 percent of beets of the B.P.I. No. 1 selection bolted. This indicates that B. P. I. No. 1 would produce seed practically every year in this region. There has been no curly-top infection during the 5-year period.

The first planting of grain sorghum is up with a good stand. The ground for the variety test is ready for irrigation. The same test that has been conducted the last two years will be continued. The varieties used in this test will be Dwarf Hegari, Fargo Strait Neck Milo, Club Kafir, Ajax, Kalo, Double Dwarf Milo (check).

Station work during the two-week period has consisted of cultivating cotton, leveling, plowing for grain sorghum, cutting weeds, cutting date offshoots of the most promising seedlings, and general irrigating.

Max E. Crannell.

#### M I S C E L L A N E O U S

The galley proof of Technical Bulletin No. 483, "Effect of Alfalfa and Farm Manure on Yields of Irrigated Crops in the Great Plains," was read recently.

## W E E K L Y R E P O R T S

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July 20 and 27, 1935

No. 15

Belle Fourche

During the week ending July 20 the maximum temperature was 100 and the minimum 54°. There was a trace of precipitation.

There have been no recent rains in this locality to benefit crops. During the week all crops in field A and potatoes and corn in M-P and O were irrigated. The picnic grounds were cleaned up.

The harvesting of barley was started in field I. Considerable rust has developed in the last week, particularly on the spring wheat. The seriousness of the damage cannot be estimated at this time.

Mr. D. A. Spencer, of the Bureau of Animal Industry at Washington, visited the station July 27 and 28. While Mr. Spencer was here the yearling sheep were scored and a general plan for the sheep work was formulated.

Beyer Aune.

Huntley

During the two-week period ending July 27 the maximum temperature was 104 and the minimum 52°. There was 0.64 inch of precipitation.

Damaging hail and wind storms occurred on parts of the Huntley project, principally in the vicinity of Worden and Ballantine, over an area of about 1500 acres. The principal damage was suffered by grains and beans. The upper end of the project escaped these storms, and no damage was done to crops on the station.

The annual Huntley project picnic was held in the project park adjacent to the station on July 20. The attendance was estimated to be about 1500 people. At this meeting Senator E. F. Eaton, of Billings, made an address, which was followed by the usual picnic program.

Director F. B. Linfield, of the Montana Agricultural Experiment Station, Mr. S. H. Hastings, and Dr. Frank M. Eaton visited the station on July 23 and 24.

Station work included irrigating all crops and harvesting dry-land grains.

Dan Hansen.

Newlands

During the two-week period ending July 27 the average maximum temperature was 91.1, with a maximum of 96; the average minimum was 55.1, with a minimum of 42°. The mean temperature was 73.1°. The wind movement averaged 3.11 miles per hour. There was 0.18 of an inch of precipitation.

The weather data compiled during this period show mean temperatures

Newlands (cont'd)

below the usual July means. The usual maximum temperatures in excess of  $100^{\circ}$  have been lacking. This condition has slowed up the growth of alfalfa somewhat, but has stimulated the growth of grain crops.

A price of \$20 to \$22 a ton is being offered for wheat and barley. Other farm products are selling at prices somewhat better than a year ago. Butterfat is 26 cents a pound, eggs 27 cents a dozen, beef 6 cents a pound, hogs  $8\frac{1}{2}$  cents a pound, and hay \$7.50 a ton delivered at the mill. However, little hay is being sold at this price.

Station activities during this period have been limited to the usual summer work. Harvesting of the grain is underway but was delayed by breakage of the binder. At present most of the grain is ready to thresh. The new threshing machine, which was received on July 25, has been set up. Further delay has been encountered in obtaining repairs for the tractor, which is used to run the threshing machine.

Mr. Headley and Mr. Cline visited the station on July 22 to acquaint themselves with the progress of the turkey experiments and to examine some cows in the dairy herd that have been having sterility troubles.

Mr. L. H. Mitchell and Mr. George O. Sanford, of the U. S. Bureau Of Reclamation, also visited the station on July 22. These men are primarily interested in obtaining any information of an economic nature that might prove of value to reclamation projects here or elsewhere. Experiments being conducted at this station with respect to better farming practices, maintaining fertility by using manure, reclamation by pasturing and manure, and new pasture crops were of the greatest interest to them. Our underground water studies on the economical use of irrigation water also proved to be of value to these men. The competition of plantings of strawberry clover, made three years ago, with salt grass and seepage was a revelation to them.

Mr. M. D. Miller, a recent graduate of the California College of Agriculture, has been added to the Nevada Experiment Station's staff that is handling the State livestock investigations being conducted at this station. The development of this phase of the activities of the station has made necessary the employment of a trained dairyman and livestock operator.

The first crop of alfalfa on the station this year made an average yield of 3,208 pounds per acre.

E. W. Knight.

Prosser

Temperatures during the week ending July 20: Maximum 103, mean maximum  $96.1^{\circ}$ , minimum 52, mean minimum  $60.5^{\circ}$ , and the greatest daily range  $45^{\circ}$ . The mean hourly wind velocity was 2.46 miles. The total evaporation was 1.895 inches.

Work on the station included hoeing and irrigating sugar beets. Harvesting of wheat plots on the rotation began at the end of the week.

Mr. S. H. Hastings and Dr. Frank M. Eaton visited the station July 15 and 16. Other visitors were Profs. E. G. Schafer and B. H. Pubols, of the State College at Pullman.

Temperatures during the week ending July 27: Maximum 99, mean maximum  $92.5^{\circ}$ , minimum 49, mean minimum  $55.8^{\circ}$ , and the greatest daily range  $40^{\circ}$ . The mean hourly wind velocity was 1.50 miles, and the total evaporation was 1.744 inches. The rainfall amounted to 0.27 of an inch.

Prosser (cont'd)

A 14-day heat period ended on July 24 with maximum temperatures of 90° or above. A severe windstorm swept the valley the evening of July 23 causing considerable damage to soft fruit trees and fruit.

The potatoes in the crop rotation were given the first irrigation during the week. Other work included chopping weeds along the flume line. Cutting the second crop of alfalfa hay was started the latter part of the week.

Carl A. Larson.

Scotts Bluff

During the week ending July 20 the average maximum temperature was 85, with a maximum of 92; the average minimum was 58, with a minimum of 50°. The wind movement averaged 4.8 miles an hour. The average daily evaporation was 0.319 inch. There was 0.12 inch of precipitation.

On July 19 the water held in the Pathfinder and Guernsey Reservoirs amounted to 393,350 acre-feet. The inflow into the Pathfinder was 731 second-feet.

During the week the potato, sugar beet, and corn plots received the first irrigation of the season, but no crop was suffering for water. Other station activities included cultivating and weeding corn and potatoes.

On Wednesday evening the Mitchell Community Club held at the station a picnic that was addressed by the acting Superintendent.

The discovery of a small weevil infestation in some alfalfa fields caused the State Entomologist to place a quarantine on alfalfa in this county.

During the week ending July 27 the average maximum temperature was 88, with a maximum of 101; the average minimum was 61, with a minimum of 54°. The wind movement averaged 5.5 miles an hour. The average evaporation was 0.294 inch. There was 0.06 inch of precipitation.

On July 26 the Pathfinder and Guernsey Reservoirs held 339,420 acre-feet of water. The inflow into the Pathfinder was 841 second-feet.

The first irrigation of the corn plots and the second irrigation of the alfalfa plots were made during the week. The large corn fields on the Walker place have been irrigated also.

Small grain crops are ripening fast. The oat plots in field K and a field of barley on the Walker place have been cut and put in the shock. The severe epidemic of rust throughout the Great Plains area, that has caused great damage especially to the wheat crop, is having a moderate effect here. In most cases in the North Platte Valley the grain crops were nearing maturity before the rust became prevalent; consequently good yields are expected.

Plans are now being made to hold the annual field station picnic on August 8. The picnic and potato tour will be combined as was done last year.

Prof. J. C. Russell, of the Nebraska College of Agriculture, was at the station during the week to take soil and grain samples from the oat plots for nitrogen and phosphorus analyses.

Lionel Harris.

Umatilla

Weather conditions during the week ending July 20:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean		
107	57	83.3	None	5.1

Work at the station consisted of irrigating, weeding, and repairing machinery in preparation for the second cutting of hay. On July 18 Messrs. Hastings, Eaton, Schoenfeld, Hyslop, Lewis, and Dana had a conference in regard to the present and future work of the station.

Mr. Dana spent the rest of the week taking readings on the curly-top investigations, and Mr. Lewis made rather extensive determinations of rate-of-percolation and volume-weight on several portions of the station. Messrs. Dana and Dean made a trip to the tomato-growing section around Milton-Freewater, Oregon, to determine the extent of damage from curly-top this year.

Weather conditions during the week ending July 27:

Temperatures			Precipitation, inch	Mean wind velocity, miles per hour
Maximum	Minimum	Mean		
102	58	78.2	0.04	6.6

Work on the station consisted of weeding, irrigating, and putting up the second crop of hay. Mr. Lewis continued his work during the week.

H. K. Dean.

## WEEKLY REPORTS

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August 3 and 10, 1935

No. 16

Belle Fourche

During the week ending August 3 the maximum temperature was 105 and the minimum 50°. There was 0.07 inch of precipitation.

During the week the harvesting of the second cutting of alfalfa was completed. The harvesting of grain on both dry and irrigated land continued during the week and is nearly completed with the exception of a few late-seeded plots. Late in July black stem-rust developed to a serious degree, and the spring wheat yield will be very much reduced, particularly that which was seeded late.

There were 23 days during July with a temperature of 90° or over. The mean temperature was 77, the mean maximum 92, and the mean minimum 61°. The precipitation during the month amounted to only 0.48 inch, which is 1.90 inches below normal for July rainfall.

The Orman Dam has about 18,000 acre-feet more of water than it had a year ago. There will be enough irrigation water for all crops this season if it is used carefully.

Mr. S. H. Hastings and Dr. Frank M. Eaton visited this station July 27-29.

Beyer Aune.

Newlands

During the two-week period ending August 10 the average maximum temperature was 91.7, with a maximum of 98; the average minimum was 48.9, with a minimum of 43°. The mean temperature was 70.3°. The wind movement averaged 2.31 miles per hour. There was no precipitation.

The outlook is for a heavy second crop of hay this year, the harvest of which has started on the project. The increased yields of hay on the project this year, together with some surplus hay from last year and reported heavy crops in California, have greatly depressed prices. At the present time good alfalfa hay has dropped to \$6 a ton in the stack, and the prospect for an increase in price is not very promising. There are fewer cattle in this western country to feed than is usually the case.

Local butchers are paying 8 to 9 cents a pound for pork. Beef is quoted at 6 cents a pound, eggs at 27 cents a dozen, butterfat at 27 cents a pound, and lambs at 6 cents a pound.

The work at the station has included chopping weeds, threshing grain, and starting second crop haying. The highest yield of barley, 36.6 bushels per acre, was made on plot Y-12. The best yield of wheat (Arizona No. 24) was 22.8 bushels per acre from plot J-11. Of the three plots in rye K-1 made the best yield, 8.4 bushels per acre.

E. W. Knight.

Prosser

Temperatures during the week ending August 3: Maximum 91, mean maximum 83.7, minimum 45, mean minimum 49, and the greatest daily range 41°. The mean wind velocity was 2.11 miles per hour. The evaporation amounted to 1.887 inches.

A 4-inch pipe line, which was previously used to irrigate the flood basins, in the third series of the crop rotation plots was changed from the plot to the alley in the third series. Other rotation work consisted of irrigating potatoes and alfalfa and chopping weeds. The second cutting of alfalfa hay has been stacked.

At the station a concrete basement is being installed in one of the small dwellings in which the cook house will be located. By this arrangement the station offices will be moved downstairs in the large office building where the dining room is now located.

Temperatures during the week ending August 10 were as follows: Maximum 94, mean maximum 86, minimum 45, mean minimum 49, and the greatest daily range 42°. The mean wind velocity was 0.99 mile per hour. The total evaporation was 1.046 inches.

The wheat from the rotation plots was threshed during the week. The average yield in bushels per acre of the wheat plots for each of the six series in the rotation block was as follows:

Series	Bushels per acre
1	44.9
2	42.7
3	43.7
4	35.2
5	40.4
6	37.3

The average yield for all the wheat plots was 40.7, the maximum 49.1, and the minimum 27.4 bushels per acre. The rate of seeding was 2.4 bushels per acre. Two of the three low-yielding plots were located on ground that had been graded during construction of the rotations.

Market prices: Good to choice hogs, \$10.50 per cwt.; choice steers, \$7.25 per cwt.; first cutting hay, baled, \$9 per ton f.o.b. car; potatoes and sacks, \$9 to \$11 per ton f.o.b. car.

Carl A. Larson.

Scotts Bluff

During the week ending August 3 the average maximum temperature was 89, with a maximum of 95; the average minimum was 61, with a minimum of 55°. The wind movement averaged 5.4 miles an hour. The average daily evaporation was 0.353 inch. There was no precipitation.

During the week the potato, sugar beet, and corn plots in field K were irrigated and weeded the second time. The increase-seed potato fields were also irrigated and weeded.

The wheat and flax plots have been cut. The second crop of alfalfa has been harvested; the average yield from the plots was 1.69 tons per acre. The maximum yield was 1.98 tons per acre and the minimum yield 1.51 tons per acre. Other station activities included preparations for the farm picnic, which is to be held August 8.

Mr. S. H. Hastings and Dr. Frank M. Eaton visited the station on July 31 and August 1.

Scotts Bluff (cont'd)

During the week ending August 10 the average maximum temperature was 90, with a maximum of 95; the average minimum was 61, with a minimum of 54°. The wind movement averaged 5.7 miles an hour. The daily average evaporation was 0.320 inch. There was 0.05 inch of precipitation.

On August 9 the Pathfinder and Guernsey Reservoirs held 217,580 acre-feet of water. The inflow into the Pathfinder was 484 second-feet.

Water has been run continuously throughout the week on the beet, potato, and bean plots in field E and on the large fields of alfalfa. The unirrigated, spring-seeded alfalfa, which made such a good start, is beginning to die now owing to extremely dry weather since the last of June. The precipitation for July was only 50 percent of normal.

Threshing grain has commenced in the Valley; and it has been found that the damage from rust in wheat and barley is more serious than was first presumed. The wheat crop is almost a total failure.

Some early potatoes are being dug and sold at prices ranging from 75 cents to \$1 per cwt. The early crop of potatoes this year has suffered extensive damage from the "purple top" disease. Spraying experiments have been carried on with the hope of discovering a practical method of controlling the Psyllid that carries and transmits the virus.

During the week R. H. Willis, Chief of the State Irrigation Bureau, ordered the Mitchell irrigation district to close its headgates, explaining that ditches farther down the river had prior and legal rights for the remainder of the season to the water in that canal. The headgates of the Mitchell district, however, are in Wyoming; and the order to close them was ignored. Consequently, Willis had a sandbag dam built across the canal in the State of Nebraska. This procedure has been upheld by a State court; as a result the Mitchell irrigation district's canal is dry for the time being. The canal waters about 13,000 acres of land.

The annual picnic and potato tour were held on August 8. Officials taking part in the program were: Dr. H. O. Werner, Dr. R. W. Goss, Director W. H. Brokaw, and D. B. Whelan, of the College of Agriculture, University of Nebraska; S. B. Nuckols and Leslie Bowen, of the U. S. Department of Agriculture; Marx Koehnke and Wm. Morrow, of the Nebraska Potato Improvement Association; and C. H. Metzger, of the Colorado Agricultural Experiment Station. A good crowd of farmers attended and heard valuable discussions of agricultural problems by these men.

Lionel Harris.

Umatilla

Weather conditions during the week ending August 3:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
92	48	70.7	Trace	7.1

During the week the second cutting of alfalfa hay on the commercial fertilizer and manure experiments was harvested. Miscellaneous work included irrigating and weeding.

One half day was spent with N. R. Mueller inspecting the plantings of Artemisia cina. The crop on some farms has decreased considerably, but on farms where it has received careful attention as to weeding and irrigating and has been consistently fertilized, the yield is equal to, if not greater than, that of previous years.

Umatilla (cont'd)

Weather conditions during the week ending August 10:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean	None	6.8
100	54	73.6		

Miscellaneous work consisted of irrigating, hauling hay, and weeding.

Messrs. Earl Price and Clyde Walker, Agricultural Engineers, of the Oregon Agricultural Experiment Station, consulted on engineering problems of the station.

F. Cuthbert, Professor of Landscape Design, University of Oregon, spent three days on the station and in the vicinity. Preliminary plans were made on the ground for revision of the landscape planting on the station to include more lawn, and to screen the livestock and machinery buildings. Professor Cuthbert is cooperating with the Oregon field stations, both State and Federal, on plans for comprehensive tests of shade trees and ornamentals. Part of this experimental material will be used on the new lawns and for screening purposes, and part for continuing the tree planting down the main lane.

H. K. Dean.

Yuma

The maximum temperature during the two-week period ending August 3 was 109, mean maximum 106, minimum 68, and the mean minimum 76°. There was no precipitation. High humidity, cloudy weather, and thunder storms to the east and northeast have prevailed for the past two weeks.

Fortunately there has been no rain in this section to interfere with the alfalfa seed harvest now under way on all parts of the project. The early threshing reports indicate a yield lighter than normal, which may be due to the heavier than usual infestation of Chalcis fly. Threshing operations are two weeks later this year, and a late season is usually accompanied by large numbers of this insect. A nominal price of 12 cents per pound is the opening quotation on new recleaned seed.

Some cotton shedding has occurred during the humid weather. Picking and ginning has started. The first bale of spring-seeded cotton was ginned on July 26.

The cantaloup season closed in July. The total crop from this section amounted to 1200 carloads.

According to reports of the U. S. Geological Survey, the discharge of the Colorado River during July 1935 amounted to 1,550,000 acre-feet. For July 1934 it was 147,000 acre-feet. The amount of water released at Boulder Dam during the month was 676,000 acre-feet. The present storage behind the dam is approximately 4,650,000 acre-feet.

Station work has included harvesting the fifth crop of alfalfa hay, threshing sweet clover, planting grain sorghum variety and cultural test plots, cultivating corn and cotton, general irrigating and hoeing.

E. G. Noble.

## M I S C E L L A N E O U S

Mr. S. H. Hastings, Principal Agronomist, returned to Washington on August 7 from a western field trip.

## WEEKLY REPORTS

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August 17 and 24, 1935

No. 17

Belle Fourche

During the week ending August 17 the maximum temperature was 105 and the minimum 50°. There was 0.34 inch of precipitation.

The first half of August was unusually hot. There were ten days when the temperature was 90° or over and five days when it was over 100°, with a maximum of 105°. From August 1 to August 15 there was no precipitation.

Threshing grain from the irrigated rotations and the maximum production experiment was completed during the week. The yields were low and rather disappointing, probably due to the extreme heat in July and the first part of August, which caused the grain to ripen prematurely.

## Yields in Maximum Production Experiment

Bushels per acre

Wheat .....	24.0
Oats .....	59.4
Barley .....	51.2

## Yields in Irrigated Rotations

Bushels per acre

	Maximum	Minimum
Wheat	27.3	14.3
Oats	83.1	29.4
Barley	44.2	12.5

Beyer Aune.

Newlands

During the two-week period ending August 24 the average maximum temperature was 90.7, with a maximum of 97; the average minimum was 50.2, with a minimum of 45°. The mean temperature was 70.5°. The wind movement averaged 2.02 miles an hour. There was no precipitation.

Normal weather has prevailed during this period. The usual warm days of August have matured the second crop of hay at the usual time. Most of this crop is already cut and in the stack. It is said that the second crop this year is better than normal on most project farms. Due to the large crops of hay this year it is selling for only about \$5 a ton in the stack. As a result of large hay crops in California and smaller numbers of beef cattle and sheep for winter feeding, there will be a great deal of surplus hay in this valley.

Newlands (cont'd)

Work at the station has consisted of second crop haying and the preparation of plots for fall seeding. On the station the yields, in pounds per acre, of second crop hay were as follows: Maximum 3844, minimum 2500, average 3113.

E. W. Knight.

Prosser

Temperatures during the week ending August 17: Maximum 94, mean maximum 80.4, minimum 41, mean minimum 49.1, and the greatest daily range 40°. The mean hourly wind velocity was 1.48 miles. The evaporation was 1.526 inches.

During the week 13 plots previously cropped to wheat were seeded in the rotation block. Eight of the plots were seeded to alfalfa and five to sweet clover. This completed the seeding of alfalfa in the 5- and 7-year rotations and the seeding of sweet clover in the 2- and 4-year rotations.

Visitors at the station during the week were: Prof. E. G. Schafer, Head of the Department of Agronomy, Washington State College; Mr. M. R. Lewis, Irrigation Engineer, Corvallis, Oregon; and Mr. Virgil Hawk, Agronomist, Soil Conservation Service, Pullman, Washington.

Temperatures during the week ending August 24: Maximum 90, mean maximum 81.5, minimum 42, mean minimum 47.5, and the greatest daily range 40°. The mean hourly wind velocity was 1.18 miles. The total evaporation was 1.230 inches.

Wheat from the nurse crop plots on field A-7 was threshed. The wheat and alfalfa grown on these plots were seeded in the dust and then irrigated for new seeding of alfalfa. The yields of wheat from the plots follow:

Rate of seeding, bushels per acre	Yields of wheat, bushels per acre
1	13
1.5	13.3
2	15.6
2.5	19.0
3	21.6
3.5	21.3

The stand of alfalfa on the various plots will be determined next year by means of hay yields.

Other station work included the irrigation of newly seeded alfalfa and sweet clover plots in the rotation series.

Carl A. Larson.

Scotts Bluff

During the week ending August 17 the average maximum temperature was 86, with a maximum of 98; the average minimum was 55, with a minimum of 44°. The wind movement averaged 6.1 miles an hour. The average daily evaporation was 0.329 inch. There was no precipitation.

On August 16 the Pathfinder and Guernsey Reservoirs held 167,030 acre-feet of water. The inflow into the Pathfinder was 518 second-feet.

The potato and beet plots in field K have been irrigated the third time.

Scotts Bluff (cont'd)

Threshing of the small grain crops at the station has been completed. In general the oat crop was satisfactory, but barley suffered slightly and wheat severely from black stem-rust.

The annual Scotts Bluff County bean tour was held on Thursday.

During the week ending August 24 the average maximum temperature was 84, with a maximum of 89; the average minimum was 56, with a minimum of 46°. The wind movement averaged 6.5 miles an hour. The average daily evaporation was 0.320 inch. There was 0.02 inch of precipitation.

On August 23 the Pathfinder and Guernsey Reservoirs held 116,260 acre-feet of water. The inflow into the Pathfinder was 152 second-feet.

The weather continues very dry. No rains of consequence have occurred here in two months. The precipitation during August to date has been only 0.07 inch. Storage water is getting low above the Pathfinder Dam. Although no definite date has been set, it is expected that no more water will be let in the canals after the first few days of September.

Station activities included irrigating sugar beets and potatoes in field E and weeding these crops in field K. A summary of the yields of small grain from the rotation plots follows.

## Yields of Oats

## Bushels per acre

## From Field K : From Field E

Maximum	91.4	:	70.6
Minimum	31.7	:	54.4
Average	65.3	:	62.7

## Yields of Wheat

## Field K

## Bushels per acre

Maximum	26.3
Minimum	3.8
Average	19.3

The total quantity of grain threshed at the station:

Oats ..... 941 bushels

Barley ..... 421 bushels

Wheat ..... 81 bushels

Several important mid-West butter markets, including Chicago, Kansas City, Mo., Columbus, Ohio, and others, have for some time refused to use Nebraska butter because Nebraska is not a certified tuberculosis-free area. A project was begun last week to test all dairy cattle in Scotts Bluff County for tuberculosis.

Sugar beets in this valley have at this time a sugar content of 11.17 percent, according to Mr. S. B. Nuckols, who is making weekly tests.

Market prices: Butterfat, 30 cents a pound; eggs, 21 cents a dozen; and new potatoes, 79 cents a cwt.

Lionel Harris.

Yuma

During the two-week period ending August 24 the maximum temperature was 113, mean maximum 103, minimum 68, mean minimum 76, and the mean  $89^{\circ}$ . There were 1.66 inches of rain.

High temperatures and high humidity have accompanied the thunderstorms that have prevailed in the entire Southwest during the past month. Heavy cloudbursts have occurred in various sections with damage to railroad beds and highways. There has been no serious damage on the project either to crops or to highways.

Alfalfa threshing has continued on both sides of the river, with yields still running lighter than normal. Seed prices remain around 10 cents a pound. Alfalfa straw is selling for \$4 a ton in the stack. No selling of alfalfa hay is reported.

Cotton picking and ginning are well under way. The seven operating gins report a total of 476 bales ginned to date. For the same period last year 2,363 bales had been ginned.

Land is being prepared for lettuce and winter garden peas. The lettuce acreage will probably show a substantial increase over last season. Approximately 10,000 acres will be planted in the Yuma territory.

Work on the station has included cultivating and hoeing grain sorghum plots, hoeing cotton, leveling fallow plots, leveling and cleaning up barnyards, repairing fences, general irrigating and cultivating.

Mr. H. L. Westover visited the station on August 18 to 20. Dr. Barre, Dr. Kearney, and Messrs. King and Beckett - all of the Cotton Division of the Bureau of Plant Industry - reviewed the cotton work of the station on August 20.

E. G. Noble.

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No. 18

Belle Fourche

During the week ending August 31 the maximum temperature was 92° and the minimum 43°. There was 0.20 inch of precipitation. The temperature during the last half of August was below normal, particularly the last week.

Work on the field station included irrigating sugar beets, potatoes, corn, and alfalfa, and cutting Sudan grass and amber cane. Both of these latter crops will make excellent yields of forage.

The seventh annual sugar beet tour was held August 26. After visits to several growers on the project, showing different methods of beet culture, the tourists stopped at the U. S. Field Station, where the Sugar Company served dinner to some 150 guests. The different rotations were inspected; then a meeting was held, during which the following subjects were discussed: Rotation of crops, early planting, close spacing (8 to 12 inches), clean cultivation, timely irrigation, and ridge planting. The following day a similar tour was held in the Rapid City district.

The sugar beet crop as a whole looks good and a better than average yield is expected.

The Butte County Fair was held at Nisland on August 29, 30, and 31. Much time was spent in helping to arrange and conduct this fair. The weather conditions during the week were not favorable for holding a fair. In spite of these conditions, many people attended, and enough money was taken in to pay the expenses of the fair.

On August 28 Mr. John Robertson, famous apple grower of Hot Springs, South Dakota, visited the station.

During the week ending September 7 the maximum temperature was 79° and the minimum 35°. There was 0.29 inch of precipitation.

The work during the week consisted of fencing pastures in field A and irrigating forest plantings and young alfalfa in field W.

The weather continued cool but warmed up some at the end of the week. It is expected it will be two weeks before there is a killing frost. By that time corn and late-planted potatoes should be matured.

The annual buck lamb sale will be held at the station on September 17.

On September 7 Mr. and Mrs. Dan Hansen, of the Huntley Field Station, visited this station.

Beyer Aune.

Newlands

During the two-week period ending September 7 the average maximum temperature was 89.9, with a maximum of 93; the average minimum was 52.7, with a minimum of 44°. The mean temperature was 71.3°. The wind velocity averaged 2.21 miles an hour. There was 0.01 of an inch of precipitation.

Newlands (cont'd)

The following fall seeding has been done at the station: Plot B-10 to a grass pasture mixture, B-11 to Ladino clover, B-12 to Reed Canary grass, B-13 and 14 to winter rye, and B15-B22 to alfalfa. Alfalfa was also seeded on plots E-2, E-3, E-7, and E-8. The plots known as the S series are being prepared for fall seeding of rye.

Work has continued on preparation of the newly leveled area on the north side of the station. It is hoped that during the next five or six weeks some 10 acres of this will be finished and seeded to winter grain. This will leave some 12 or 14 acres to finish this winter.

E. W. Knight.

Prosser

Temperatures during the week ending August 31: Maximum 91, mean maximum 88, minimum 45, mean minimum 54.5, and the greatest daily range 38°. The mean wind velocity was 0.82 mile per hour. The total evaporation was 1.096 inches.

During the week the new seedings of alfalfa and sweet clover in the rotations were irrigated. Routine weeding of plots, alleys, and roadways was continued. Soil samples were taken on plots 4 and 6 in the apple orchard. Larger differences in transpiration were found between the wet and dry plots irrigated at 15-day intervals than were found between the wet and dry plots irrigated at 30-day intervals.

The peach crop in the valley this year is much smaller than usual. The average cash price of prunes is \$30 per ton. Hop picking is now in progress in the valley.

Mr. Bliss F. Dana, Pathologist working with curly top and vegetable diseases, visited the station to observe curly top in the sugar beet plots in the rotations.

Temperatures during the week ending September 7: Maximum 95, mean maximum 89.4, minimum 50, mean minimum 55.3, and the greatest daily range 43°. The mean hourly wind velocity was 1.16 miles. Evaporation from free water surface was 1.265 inches.

Work on the rotations included irrigating potatoes, new seeding of alfalfa, sweet clover, and sugar beets. Weeding of plots, roads, and flume lines was continued.

Carl A. Larson.

Scotts Bluff

During the week ending August 31 the average maximum temperature was 76, with a maximum of 86; the average minimum was 51, with a minimum of 46. The wind movement averaged 6.9 miles an hour. The daily average evaporation was 0.298 inch. There was 0.01 inch of precipitation. The average precipitation for August from 1910-1934 has been 1.69 inches. The precipitation during August 1935, 0.08 inch, is the lowest for this month since 1910.

The combined storage of water in the Pathfinder and Guernsey Reservoirs on August 30 was 364,420 acre-feet. The inflow into the Pathfinder was 331 second-feet and into the Guernsey 3,204 second-feet.

During the week the sugar beet and potato plots in field K were irrigated the fourth time. The grain plots in rotations 28, 7, 3, and 5 have been plowed to control a heavy growth of sweet clover. The oat plots in

Scotts Bluff (cont'd)

rotations 44, 48, and 65 have been irrigated and were seeded to alfalfa on August 26. Other station activities included weeding potatoes and beets in field E and making preparations for cutting ensilage.

Water-users of the Pathfinder Irrigation District were notified that the gates at the head of the Interstate Canal will be entirely closed by the evening of September 7, if the present rate of use of water is maintained. The allotment to the Pathfinder Irrigation District will have all been delivered into the head of the canal by that date.

During the week ending September 7 the average maximum temperature was 69, with a maximum of 80; the average minimum was 47, with a minimum of 35°. The wind movement averaged 6.2 miles an hour. The daily average evaporation was 0.177 inch. There was 0.30 inch of precipitation.

The potatoes and sugar beets in field E were irrigated the fourth time. New seedings of alfalfa on the Walker place were irrigated as well as the west windbreak and lawns. Winter wheat was seeded in rotation 5 and fall rye in rotation 7 of field K. The sweet clover in rotation 45 was irrigated and also the new seeding in rotations 48, 44, 27, and 65. The beet plots in fields K and E are being irrigated the fifth time, as the water held out longer than was expected.

Haying was discontinued the latter part of the week due to rains. Other station activities including moving machinery into the machine shed from the outside.

The Scotts Bluff County Fair will be held at Mitchell September 11, 12, and 13. The station has been requested to enter exhibits.

Messrs. S. H. McCrory, Chief of the Bureau of Agricultural Engineering, Washington, D. C.; W. W. McLaughlin, Chief of the Division of Irrigation, Berkeley, California; and L. M. Winsor, Irrigation Engineer, Minot, North Dakota, visited the station September 1.

The Pathfinder and Guernsey Reservoirs on September 6 held a combined total of 50,910 acre-feet of water. The inflow into the Pathfinder was 131 second-feet and into the Guernsey 1,938 second-feet.

Lionel Harris.

Umatilla

Weather conditions during the week ending August 17:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean	None	5.2
100	44	70.8		

General work consisted of irrigating and burning weeds. In spite of efforts to prevent sand-burs from becoming established on this site, they are rather generally distributed. It is thought that this is due to hay brought from other ranches, as none of these seeds have been found on the weed screens. A considerable portion of the hay used by hired teams had sand-burs in it. Precautions were taken to burn all refuse and manure in the corrals where these teams were kept, but the burs apparently were rather widely distributed by the teams while at work.

On August 17 people on the annual tour of the Eastern Oregon Turkey Growers' Association visited this station to view this year's work and hear the results of the feeding test that was made a year ago. There were 138

Umatilla (cont'd)

turkey growers at the station and about 300, including visitors from town, at the picnic and program in the afternoon.

Weather conditions during the week ending August 24:

Temperatures			Precipitation, inch	Mean wind velocity, miles per hour
Maximum	Minimum	Mean		
97	47	71.5	0.04	4.5

Work on the station during the week was principally in preparation for Field Day. A bull barn 20 feet by 12 feet, having quarters for two bulls, was constructed. Moving the bulls from the present location (the calf barn) will make available the box stalls and much better corral space for the calves.

A conference was held with Mr. R. W. Morse, Dairy Specialist of the Oregon Extension Service, in regard to the dairy situation on the project. The Superintendent accompanied him on the farm tour, during which particular attention was given to pastures.

Weather conditions during the week ending August 31:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean		
97	46	75.4	None	2.5

General work consisted of irrigating, weeding, and preparing for Field Day. The first Field Day on the present station site was held August 31, with approximately 250 farmers and their families present. During the morning a tour of the fields was made, and after lunch at noon under a tent west of the office a speaking and musical program was held. The speakers were G. W. Peavy, President of the Oregon Agricultural College, who spoke on the subject of the Oregon Agricultural College and the changing order; F. L. Ballard, Vice Director of Extension, whose subject was recent adjustments in Oregon agriculture; and G. R. Hyslop, Professor of Farm Crops, who spoke on new crops for sandy lands under irrigation. B. F. Dana, who was here also, explained the curly-top work during the field trip.

A loud speaker system was installed and proved very effective in permitting the visitors to sit on the grounds wherever shade was available and at the same time hear the program clearly.

H. K. Dean.

#### MISCELLANEOUS

An article by Frank M. Eaton and George Y. Blair entitled "Accumulation of Boron by Reciprocally Grafted Plants" was published in the July 1935 issue of PLANT PHYSIOLOGY.

## W E E K L Y R E P O R T S

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No. 19

Belle Fourche

During the week ending September 14 the maximum temperature was 89 and the minimum 39°. There was no precipitation.

The potatoes and sugar beets were irrigated during the week, making six irrigations for potatoes and five for sugar beets and the last irrigation for this season.

The variety test of silage was harvested and cut. The maximum yield, 8.84 tons per acre, was obtained from Rainbow Flint; and the minimum yield, 5.98 tons per acre, from Minnesota No. 13.

Other work on the station included fencing pastures for the sheep, picking apples, and plowing.

During the week ending September 21 the maximum temperature was 93 and the minimum 41°. There was no precipitation.

On September 17 the annual farm sale was held. The buck lambs averaged \$12 per head. One aged buck sold for \$25 and one for \$20. The ewes culled from the flock averaged \$6.60 per head.

During the week the corn was harvested on the dry and on the irrigated rotations. As there has been no killing frost to date, the corn matured in good condition. Harvesting the third cutting of alfalfa was completed during the week. The sugar beet harvest is scheduled to begin September 27 and the factory to be opened October 1.

Beyer Aune.

Huntley

During the week ending September 21 the maximum temperature was 93 and the minimum 34°. There was no precipitation.

Following a period of unseasonably cool weather, the past week was warm, and late crops are maturing in good condition. No frost damage has occurred yet in this section.

The harvest of beans is nearing completion in the valley. The acreage in beans is unusually large, and on many farms this crop has been grown in place of sugar beets, of which there are only about 11,000 acres. In Yellowstone County about 28,000 acres are in beans, mainly of the Great Northern variety. The yield is reported to be only fair, and the price at this time is from \$2.25 to \$2.75 per cwt.

The hay crop in this district is extremely short due to unfavorable seasonal conditions and grasshopper injury. The farm price of hay is \$12 per ton. As a result of the short hay and sugar beet crops there will be relatively little winter feeding of livestock in this section.

The average yield of alfalfa from the irrigated rotations on this

Huntley (cont'd)

station was 0.99 ton per acre for the first cutting and 1.01 tons per acre for the second cutting.

Feeder lambs are selling at \$7 a cwt. and large numbers are being shipped out of the State.

Station work included irrigating stubble land, threshing late grains, and plowing. Director F. B. Linfield and Prof. H. E. Morris, of the Montana Agricultural Experiment Station, were visitors here on September 16.

## Summary of Crop Yields from the Irrigated Rotations in 1935

	Bushels per acre		
	Maximum	Minimum	Average
Oats	95.0	32.6	69.8
Wheat	38.6	7.5	22.5
Flax	26.1	2.9	26.1

Dan Hansen.

Newlands

During the two-week period ending September 21 the average maximum temperature was 87.6°, with a maximum of 92; the average minimum was 46, with a minimum of 43°. The mean temperature was 66.8°. The wind velocity averaged 1.82 miles an hour. There was no precipitation.

The continuance of frost-free days assures a normal third crop of alfalfa. The hay crop on the Newlands project this season is much larger than usual, indicating a large surplus of and low prices for hay. At present hay is bringing \$6 a ton in the stack. As a result of the large surplus and low price of hay it is expected that a larger number than usual of beef cattle and sheep will be fed on the project this winter.

The silage corn has been cut and put in the silo. This is the first time the new concrete silo has been filled. Feeding experiments with silage will be conducted this winter. The maximum yield of silage corn per acre was 14,875 pounds and the minimum yield was 4,297 pounds.

In addition to harvesting silage corn, the station employees have been engaged in further land leveling and ditch building operations.

E. W. Knight.

Prosser

Temperatures during the week ending September 14: Maximum 92, mean maximum 81.7, minimum 46, mean minimum 50.8, and the greatest daily range 42°. Rainfall amounted to 0.05 of an inch. The mean hourly wind velocity was 1.04 miles. The evaporation was 1.001 inches.

There are 540,428 acre-feet of water impounded in the reservoirs of the Bureau of Reclamation, with less than a month of the irrigation season remaining. Last year at this time 324,961 acre-feet were impounded.

During the week the cook house was moved to the small dwelling especially prepared for it. Work on the rotations included mainly routine irrigation. Two alfalfa plots were reseeded where a good stand was not obtained by the previous seeding. The third cutting of alfalfa hay was started on the farm fields at the end of the week. Color picking of Jonathan apples took place during the week. These apples were of good quality,

Prosser (cont'd)

and the worm damage was very slight. The hop crop in the valley this year has been damaged considerably by mites, mold, and red spider. Only half of the crop will be harvested, and it will amount to approximately 25,000 bales.

Extra Fancy Jonathan apples are being sold for 90 cents per packed box f.o.b. car and 80 cents for Fancy. First grade Bartlett pears returned \$25 per ton to the grower at the cannery and for other grades \$12.50 per ton. Cannery prices are better than fresh fruit prices. The price of potatoes increased \$3 a ton and is now \$13 a ton with sacks. Good to choice lambs are \$7.50 a cwt. in Yakima, showing an increase of \$1 a cwt. during the week.

Temperatures during the week ending September 21: Maximum 84, mean maximum 78.5; minimum 40, mean minimum 46.4, and the greatest daily range 40°. The mean hourly wind velocity was 0.9 mile. Evaporation amounted to 0.763 inch.

Work on the rotations this week included routine irrigation of new seedings and potatoes. The alfalfa plots were clipped for the third time. The stand of corn on the corn plots is being determined. Other farm work included stacking the third cutting of alfalfa and picking Jonathan apples. Soil samples were taken in the old Sunnyside Park area at Sunnyside where some investigations on salty soil were conducted during 1923-1924.

Officials of the Utah-Idaho Sugar Company state that they will put a factory in the Yakima Valley if they can be assured a minimum of 50,000 tons of sugar beets annually. The yield in the valley this year will probably be one half of the desired amount.

Market prices: U. S. No. 1 potatoes, \$14 per ton; oats, \$18 per ton.

Andres Garcia Cabezon, Horticulturist, Federal Department of Agriculture, Spain, visited the station during the week to observe irrigation experiments in horticulture.

Carl A. Larson.

Scotts Bluff

The average maximum temperature during the week ending September 14 was 74, with a maximum of 85; the average minimum was 47, with a minimum of 39°. The wind movement averaged 3.4 miles an hour. The average daily evaporation was 0.142 inch. There was 0.50 inch of precipitation.

The water in the Government canal held out longer than was expected, making possible a fifth irrigation (which was completed Monday) of the beet and potato plots in fields K and E. The last water of the season was delivered to the station on September 10.

During the week the third cutting of hay was put in the stack and filling the silos was started. The average yield of hay per acre was 1.99 tons, of which 26 percent was weeds, leaving 1.51 tons per acre of good hay.

On September 9 and 10 considerable time was spent in preparing an exhibit for the Scotts Bluff County Fair, which was held September 11, 12, and 13 at Mitchell. The exhibit prepared by the station showed: (a) the results of the crop rotation work, and (b) representative samples of various varieties of vegetables. The attendance at the fair was somewhat smaller than in previous years. The livestock exhibits were not up to par, particularly in respect to hogs, but the exhibits of crops were good.

On the night of September 10 the Superintendent addressed a meeting of the lamb feeders at the Lincoln Hotel. Keen interest was shown in the lamb feeding experiments which have been carried on here under the direction of the late Mr. James A. Holden, and a unanimous desire was expressed

Scotts Bluff (cont'd)

that the work be continued.

## Summary of Alfalfa Yields in 1935

## Yields in tons per acre

	First cutting	Second cutting	Third cutting	Total
Maximum	2.41	1.98	2.76	6.68
Minimum	.67	1.51	.092	.092
Average	1.88	1.69	1.51	2.66

During the week ending September 21 the average maximum temperature was 81, with a maximum of 87; the average minimum was 46, with a minimum of 42. The wind movement averaged 4.8 miles an hour. The average daily evaporation was 0.233 inch. There was no precipitation.

In addition to the routine activities, station work consisted solely of cutting corn and filling silos. Two silos have been filled; approximately eight acres, which will be used as grain, remains to be cut.

The sugar beet crop in the valley is making a good growth. Despite reduced acreage, the tonnage this year will be larger than it was last year. The potato crop also is growing well and an abundant yield is indicated. Anticipating a low price for potatoes, an organization of growers in the valley has formulated a plan to harvest only 90 percent of the present crop. It is proposed to circulate the plan, by the chain letter method, in all the leading potato-growing areas of the United States.

During the last month a shire-stallion has been kept at the station for the purpose of breeding three mares.

The Nebraska Supreme Court upheld the State of Nebraska's right to regulate the Mitchell Irrigation District, although the Mitchell headgates are in Wyoming.

Lionel Harris.

Umatilla

## Weather conditions during the week ending September 7:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean		
98	49	75.6	None	2.8

Miscellaneous work during the week consisted of cleaning up sand-burns and irrigating. Dr. H. L. Blood, Pathologist in charge of curly-top work in Utah, conferred with Mr. B. F. Dana and the Superintendent at this station on past results and future work in testing vegetables for curly-top resistance.

## Weather conditions during the week ending September 14:

Temperatures			Precipitation,	Mean wind velocity, miles per hour
Maximum	Minimum	Mean	inch	
97	45	71.8	0.01	3.8

The new bull barn has been painted. The third crop of hay was cut, and a general irrigation was applied. Mr. H. E. Cosby, Extension Poultryman, spent one day at the station to assist in writing a circular on the turkey experiments of the last two years. Mr. R. S. Besse, Vice Director

Umatilla (cont'd)

of the Oregon Experiment Station, stopped here for a brief visit while on a tour of eastern Oregon.

Weather conditions during the week ending September 21:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
88	44	65.4	0.07	2.8

Dr. J. R. Hagg, Nutrition Chemist, and Dr. I. R. Jones, Associate Dairyman of the Oregon Experiment Station, visited the station to confer on the dairy experiments. The check of the production of the young stock from the senior herd sire shows that he had actually decreased production under that of the dams. Records of the breeding behind this bull indicated that he should have been an outstanding sire, but he failed to reproduce production. This bull and five low-producing cows will be sent to the butcher.

Dr. Haag and Dr. Jones are very much interested in the high protein content of the hay in this vicinity. Analyses were made of the various lots of hay which were fed to the dairy herd, and in no instance has the crude protein been below 13 percent, while in other parts of Oregon, particularly in the Willamette Valley, the percentage rarely exceeds 12, and in some instances has been 9 and 10. It appears that this accounts for the much higher production from the cows on hay alone in this station herd than that from the herd at Corvallis.

Another outstanding feature of the dairy work here has been the consumption of disodium phosphate, which was substituted as a source of phosphorous when it was found that the animals did not readily consume sterilized bone-meal. For over 20 years the herds of the Umatilla project have had a great deal of breeding trouble, while in the station herd no trouble at all has been experienced. It is possible that the phosphorous deficiency was the governing factor, and that it is being corrected by the consumption of disodium phosphate. At times the station herd has consumed as much disodium phosphate as sodium chloride.

H. K. Dean.

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1911-1912.

## WEEKLY REPORTS

Of The Division Of  
 WESTERN IRRIGATION AGRICULTURE  
 Bureau of Plant Industry  
 United States Department of Agriculture

(Not to be published without the prior consent of this Division)

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Vol. XXXVII

September 28 and October 5, 1935

No. 20

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Belle Fourche

During the week ending October 5 the maximum temperature was 79 and the minimum 26°. There was no precipitation. The first light killing frost occurred on October 1 when the temperature went down to 31° for a short time.

The feeder lambs for the lamb-feeding experiment were delivered the first of the week. These lambs were divided into lots of 100 each and will be fed the following rations:

- Lot 1. Corn, alfalfa hay.
- Lot 2. Corn, mono-calcium phosphate, alfalfa hay.
- Lot 3. Corn, Sudan grass.
- Lot 4. Corn, cottonseed cake, Sudan grass.
- Lot 5. Corn, Amber cane.
- Lot 6. Corn, wheatgrass hay.
- Lot 7. Corn, cottonseed cake, wheatgrass hay.

These lambs were all ear-tagged and individual weights were taken at the beginning of the experiment. Their average individual weight was 76 pounds. They will be weighed individually every 30 days while on feed. The feeding experiment will probably last about 100 days. A carload of lambs was also obtained for the 4-H Club boys. There are 15 boys in the club; each boy will feed 15 lambs. These lambs will be assembled here at the station on Lamb Feeders' Day when they will be judged by some representative from the Sioux City Stockyards.

The sugar beet harvest began September 27, and the sugar factory commenced operation on October 1. The yield per acre is generally satisfactory, and the percent of sugar is above average. The beets sliced during the first week of factory operation averaged 17 percent sugar.

Beyer Aune.

Huntley

During the week ending September 28 the maximum temperature was 89 and the minimum 22°. The precipitation was 0.09 inch.

The first killing frost of the season occurred on the morning of September 27, when the minimum temperature was 22°. All field crops were fully matured, and beans were harvested before this frost occurred.

The harvest of sugar beets will begin on October 1. The yield will be comparatively low in most sections due mainly to damage from curly top.

A C.C.C. camp has been established on the project at Ballantine. This camp has an enrollment of 200 boys who are repairing the project irrigation system and constructing a storage reservoir on the high line at Anita.

Huntley (cont'd)

Station work included fall plowing and grading of station roads in preparation for graveling.

Dr. A. L. Strand, Entomologist of the Montana Agricultural Experiment Station, was a station visitor during the week.

Dan Hansen.

Newlands

During the two-week period ending October 5 the average maximum temperature was 79.3, with a maximum of 87; the average minimum was 41.6, with a minimum of 32°. The mean temperature was 60.5°. The wind velocity averaged 1.63 miles per hour. There was a trace of precipitation.

The entire third crop of hay at the station, amounting to some 26 tons, has been harvested. Due in part to a growing period longer than usual, the yields were slightly above normal, the average yield being about 1.13 tons per acre. This third crop has been chopped and stored in the dairy hay barn for use in feeding experiments this winter. The average yield of the three crops of hay at the station this year was 4.29 tons per acre as compared with an average production on the project of about 2.90 tons per acre. The station area is gradually becoming better than average project land. Ten years ago the station average was about 2.75 tons of hay per acre.

Other work at the station during this period has consisted of leveling operations. The northeast ten acres of the station area has reached a stage where levees will be thrown up in preparation for the first irrigation. This flooding will be given in order that the leveling can be checked and the filled areas may settle. Then the plots will be releveled, irrigated, and seeded to fall grain.

The present outlook is for a large quantity of cheap hay and somewhat of a shortage in feeder cattle. Buyers are encountering some difficulty in obtaining steers at a figure low enough to guarantee profitable feeding operations even with hay at \$6 a ton.

E. W. Knight.

Prosser

Temperatures during the week ending September 28: Maximum 82, mean maximum 77.1, minimum 35, mean minimum 41.1, and the greatest daily range 43°. The mean wind velocity was 0.821 mile an hour. The evaporation was 0.872 inch.

Work during the week included routine irrigation of alfalfa, stacking hay, and harvesting Delicious apples.

The offices in the main building at the station were moved from the second floor to the first floor. The cook house was previously moved to one of the small dwellings.

Messrs. J. M. Wallace, Associate Pathologist in Sugar Plant Investigations, Twin Falls, Idaho, and Charles S. Holton, Agent, Wheat and Oat Smuts Investigation, Pullman, Washington, visited the station during the week.

Temperatures during the week ending October 5: Maximum 84, mean maximum 74, minimum 40, mean minimum 45.5, and the greatest daily range 42°. The mean hourly wind velocity was 0.447 mile. The total evapora-

Prosser (cont'd)

tion was 0.524 inch. The rainfall amounted to 0.21 inch. The rainfall during the crop season October 1, 1934 to October 1, 1935 was 4.57 inches. For the same period last year the rainfall amounted to 5.91 inches.

Work on the rotations this week included routine irrigation and trimming plot ends on new seedings of alfalfa and sweet clover. The potato plots in the first and second series were dug. These plots were severely damaged by wireworms, and the yield ranged from  $1\frac{1}{2}$  to  $3\frac{1}{2}$  tons per acre.

About one third of the Rome Beauty apples were harvested during the week.

Dr. R. E. Marshall, temporarily in charge of the Department of Horticulture, Washington State College, Pullman, and Mr. James of the U. S. Reclamation Service at Sunnyside, visited the station to take pictures of experimental work.

Carl A. Larson.

Scotts Bluff

During the week ending September 28 the average maximum temperature was 68, with a maximum of 85; the average minimum was 42, with a minimum of  $27^{\circ}$ . The daily average wind movement was 5.5 miles an hour. The average daily evaporation was 0.195 inch. There was 0.14 inch of precipitation.

The number of lambs fed in the North Platte Valley this winter will be approximately 75,000 less than the number fed in 1934, according to a report by Van A. Ferry, Union Pacific Railway official of Gering. Ferry stated that there would be less than 400,000 lambs shipped into the valley for feeding purposes. Last year approximately 60,000 cattle and 458,000 lambs were shipped from the North Platte Valley to livestock markets.

A carload of fat lambs raised in western Nebraska sold for \$9.25 a cwt. at the Omaha livestock market.

Station activities during the week included cutting corn in field K, finishing filling the second silo, and making preparations for the potato harvest.

The first frost of the season occurred during the night of September 27 when the temperature went down to  $27^{\circ}$ . As there is a heavy growth of vines in the potato crop this frost will be a boon to the harvesting operations.

Harvesting of potatoes in the valley began this week. The yield is large, but the potatoes are immature at present and skin very easily in the digging process; otherwise they are of good quality. Potatoes are very cheap here, about 35 cents a cwt.

During the week ending October 5 the average maximum temperature was 71, with a maximum of 75; the average minimum was 34, with a minimum of  $32^{\circ}$ . The daily average wind movement was 5.7 miles an hour. There was no precipitation.

Harvesting potatoes has been the principal activity at the station during the week. All potatoes have been dug in fields K and E and approximately 50 percent of the foundation seed stock plots, which are producing a large quantity of excellent type potatoes.

There is a scarcity of potato pickers, and they are being paid from 2 to 4 cents a bushel, depending upon the yield of potatoes.

Scotts Bluff (cont'd)

A large quantity of potatoes have been put in storage in the valley and to date none has been damaged by frost. The average yield, 300 bushels an acre, is normal here and also in the dry land area surrounding Alliance, where the yield is over 125 bushels an acre.

Dr. H. O. Werner harvested some of his potatoes on Saturday. Prof. M. D. Weldon has spent most of the week at the station taking potato and soil samples from the plots in field K for nitrate and phosphate analyses.

Mr. S. B. Nuckols, Associate Agronomist of the U. S. Department of Agriculture, announced that final analyses of sugar beets from 30 fields in the Scotts Bluff and Gering factory districts showed a sugar content of 14.93 percent.

Lionel Harris.

Umatilla

Weather conditions during the week ending September 28:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean		
86	37	62.1	None	2.5

Minimum temperatures during the nights when 37° was recorded at the station were low enough on the lower lands of the Umatilla and Stanfield projects to kill tender crops such as squash, beans, and tomatoes.

The major station activity during the week was harvesting late crops. Mass selections of the tomatoes still showing resistance to curly top were made, and a considerable quantity of seed was saved. Individual selections of resistant beans were saved for seed.

Official visitors were Dr. J. M. Wallace, of the Division of Sugar Plant Investigations, stationed at Twin Falls, Idaho, and Dr. C. S. Holton, of the Division of Cereal Investigations, stationed at Pullman, Washington. Dr. Wallace viewed the curly-top experiments while on a trip to the Northwest primarily for the purpose of investigating the sugar beet situation in the Yakima Valley. He stated that U. S. No. 1 was looking remarkably well just prior to harvest. Dr. Holton was especially interested in the smut on sand-burs, which is being propagated at the station. The farmer from whom we received our original supply of smut states that it has spread considerably in his fields during the past year, which is a rather encouraging feature. Apparently the smut is especially active during July and early August, but in most instances burs develop on the tops of the smutted plants after the middle of August. A considerable quantity of spores was harvested, and will be used to inoculate the land and burs at various times during the fall and spring to determine the best time. Dr. Holton has offered to assist in the problem with greenhouse experiments to determine the best time for inoculation.

Weather conditions during the week ending October 5:

Temperatures			Precipitation	Mean wind velocity, miles per hour
Maximum	Minimum	Mean		
86	42	64.3	None	2.5

The mean temperature for the month of September was 6.6° above normal and 2° above the previous maximum for the month. The precipitation

Umatilla (cont'd)

was 0.08 inch as compared with the normal of 0.47 inch. Evaporation was practically 2 inches above normal, and the mean wind about normal.

During the week the harvesting of late crops was continued.

H. K. Dean.

## M I S C E L L A N E O U S

"Effect of Alfalfa and Farm Manure on Yields of Irrigated Crops in the Great Plains", by Stephen H. Hastings, was published recently as Technical Bulletin No. 483 of the Department.

A paper entitled "Absorbed Sodium in Soils as Affected by the Soil-Water Ratio", by Frank M. Eaton and V. P. Sokoloff, was published in the September 1935 issue of SOIL SCIENCE.

A paper entitled "Salinity of Irrigation Water and Injury to Crop Plants", by Frank M. Eaton, was published in the August and September, 1935, issues of THE CALIFORNIA CITROGRAPH.

Leaving Washington on October 4, Mr. S. H. Hastings is now in the Southwest on a field trip. His itinerary includes El Paso and San Antonio, Texas; Phoenix and Yuma, Arizona; and Riverside, California. He is expecting to return to Washington about November 1.

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ROBERT L. HARDEN  
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Mr. Robert L. Harden, Head Clerk of the Division of Western Irrigation Agriculture, died October 4, 1935 at his home in Washington after a brief illness of pleurisy and pneumonia. He was born in St. Mary's County, Maryland, on January 31, 1892.

Entering the Government service in the Bureau of Supplies and Accounts of the Navy Department in 1909, Mr. Harden was transferred in 1914 to the Department of Agriculture. He had been employed in the Washington office of Western Irrigation with the exception of two years (May 1919 to May 1921) as Clerk of the U. S. Field Station at San Antonio, Texas, and three months as supervisory clerk of the office of Fruit Disease Investigations. He had been Head Clerk of the Division of Western Irrigation Agriculture since March 1923.

Mr. Harden's wife, daughter, mother, three sisters, and two brothers survive him.



## W E E K L Y R E P O R T S

Of The Division Of  
 WESTERN IRRIGATION AGRICULTURE  
 Bureau of Plant Industry  
 United States Department of Agriculture

(Not to be published without the prior consent of this Division.)

Vol. XXXVII

October 12, 19, and 26, 1935

No. 2

Belle Fourche

During the week ending October 12 the maximum temperature was 81 and the minimum 28°. There was 0.14 inch of precipitation.

On October 7 and 8 the feeder lambs were graded. Prof. J. W. Wilson, Director of the South Dakota Experiment Station, assisted in this work.

The potatoes in the irrigated rotations in the maximum production test in field P and in the variety test in field O were harvested during the week. The following is a summary of the yields in the irrigated rotations:

	Bushels per acre	Percent marketable
Maximum	274.0	86.2
Minimum	96.7	49.2
Average	156.3	76.7

The yields of potatoes following alfalfa showed up to better advantage this year than any year in the past. There was considerable scab on the potatoes in the short rotations. The scab was particularly bad in the continuously cropped plot and in rotation 30.

Hay is selling for \$5 per ton in the stack.

During the week ending October 26 the maximum temperature was 79 and the minimum 20°. There was 0.17 inch of precipitation.

Previous to harvesting the sugar beets, samples were taken from each plot, consisting of ten beets to a sample and ten samples from each quarter-acre plot, for analysis of the sugar content and purity. These samples were analyzed by the Black Hills sugar plant at Belle Fourche. The average sugar content in 260 samples was 20.03 percent sugar and a purity of 88.6 percent. The maximum was obtained in rotation 23, 21 percent, and the minimum, 18.34 percent, in rotation 47.

The maximum yield was 16.1 tons per acre in rotation 49, where the beets followed sweet clover pastured, and the minimum, 2.44 tons, in rotation 66, where the beets followed red clover. For all rotations the average was 8.86 tons per acre.

In the maximum production test the yield of beets was 18.04 tons per acre, the sugar content was 20.65 percent, and the purity 88.31 percent. The harvesting of beets was completed on October 26.

Beyer Aune.

Newlands

During the two-week period ending October 19 the average maximum temperature was 69.8, with a maximum of 82°; the average minimum was 33.2.

Newlands (cont'd)

with a minimum of 23°. The mean temperature was 51.5°. The wind velocity averaged 2.10 miles per hour. There was 0.05 of an inch of precipitation.

The first killing frost of the fall occurred on October 16. The period free from frost this year was 151 days, which is 25 days longer than normal. This long frost-free period resulted in a fairly heavy third crop of alfalfa. Likewise all garden crops matured before a killing frost occurred.

Farm prices have gained slightly during recent weeks. Butterfat is 31½ cents a pound, eggs 38½ cents a dozen, beef 6½ cents a pound, pork 9 cents a pound, and hay \$6 a ton in the stack.

Making preparations for winter, burning weeds, and leveling land have been the principal activities at the station. At the present time about ten acres of newly leveled land in the northeast section of the station area is ready for its first irrigation. The rough spots will be smoothed off as soon as it has been irrigated, then the area will be seeded.

E. W. Knight.

Prosser

Temperatures during the week ending October 12: Maximum 78, mean maximum 70.8, minimum 35, mean minimum 43.3, and the greatest daily range 35°. The mean hourly wind velocity was 1.35 miles. The total evaporation was 0.584 inch. The rainfall amounted to 0.2 of an inch. The weather has been cool, but so far no frosts have occurred.

With one week of the irrigation season remaining, there is 428,489 acre-feet of water still impounded in the reservoirs of the irrigation system.

Work on the rotations included irrigating plots which are to be planted to sugar beets next spring, cultivating head ends of plots in all series, and weeding continuous wheat plots. Other farm work included hand-digging of plot ends in preparation for the use of the potato digger, and completing the harvest of Rome Beauty apples.

Fifty-six lambs from the station were marketed in Yakima, bringing \$7.50 a cwt. The price of onions 3 inches in diameter or larger is \$14 to \$15 per ton and for onions 2 inches or larger \$11 per ton.

Produce shipped from the Yakima Valley in carload lots has been less this year than last year; only during the last two weeks have shipments exceeded those of the corresponding period last year. Seasonal totals up to October 10 this year are 7,169 carloads compared to 10,387 carloads shipped last year during the corresponding period.

Temperatures during the week ending October 19: Maximum 70, mean maximum 64.4, minimum 32, mean minimum 40, and the greatest daily range 34°. The rainfall amounted to 0.49 of an inch. The mean hourly wind movement was 0.9 mile. The evaporation was 0.357 inch. Frost occurred on October 16. The frost-free period this crop season was 159 days.

The Sunnyside Canal normally carries a flow of 1300 c.f.s. at the point of diversion, but on October 19 the amount diverted was reduced to 630 c.f.s.

Work on the rotation series this week included extension of culverts on the west side of the series and harvesting the corn plots of the first series. Other farm work included harvesting Winesap apples and hand-

Prosser (cont'd)

digging plot ends in the potato fields.

Two test wells were set in the southeast corner of field D-6 in order to observe the movement of ground water during the winter. The water level in this area is a few inches from the ground surface at the present time.

Visitors during the week were M. C. Lane and Mr. Gibson, of the Wireworm Laboratory at Walla Walla, Washington, and W. H. White, Principal Entomologist in Charge of the Division of Truck Crop and Garden Insects, U. S. Department of Agriculture, Washington, D. C.

Weather conditions during the week ending October 26: Maximum 62, mean maximum 56.5, minimum 22, mean minimum 27.1, and the greatest daily range 35°. The wind velocity was 0.81 mile per hour. The evaporation was 0.440 inch.

The water in the Sunnyside Canal was shut off on October 22.

The digging of potatoes in the rotation plots was finished during the week, and the yields from these plots, by series, were as follows:

Series No.	Number of Plots	Bushels per Acre
1	4	73.6
2	3	104.6
3	5	273.4
4	2	378.0
5	4	409.3
6	4	<u>352.3</u>
Average . . .		265.0

The potatoes on the first two series were badly damaged by wireworms.

Other work on the rotations included harvesting the corn plots.

Potatoes are now being dug on farm fields. While the yield is very good, the quality of the potatoes is rather poor this year.

Fifty-three hogs, averaging 200 pounds each, were sold at the station for \$9.10 per cwt.

Carl A. Larson.

Scotts Bluff

During the week ending October 12 the average maximum temperature was 65, with a maximum of 76; the average minimum was 33, with a minimum of 28°. The wind movement averaged 6.8 miles an hour. There was no precipitation.

The potato harvest has been completed at the station. Over 2,000 bushels of foundation seed stock, <sup>and</sup> approximately 3,000 bushels of table stock potatoes have been harvested and stored in the station cellar.

The harvesting of sugar beets was begun on S. B. Nuckols' experimental plot. The first beets harvested yielded a sugar content of 17 percent.

Due to the low price of potatoes (now 45 cents per cwt. with sacks 9 cents each), the potato growers of the valley met in the Lincoln Hotel on the evening of October 9 and discussed methods of market control that would boost the price of potatoes. It was agreed to support the Government in a cull buying program to reduce the surplus of this year's crop.

Scotts Bluff (cont'd)

Most growers were favorably disposed to the control program as outlined for the future.

The hog pasturing test in rotation 65 was completed October 8.

Livestock feed conditions in western Nebraska are very good. The price of beef was 25 to 50 cents higher than it was last week.

Butterfat is selling for 34 cents a pound and eggs for 31 cents a dozen.

During the week ending October 19 the average maximum temperature was 67, with a maximum of 76; the average minimum was 36, with a minimum of 28°. The daily average wind movement was 7.2 miles an hour. There was no precipitation.

During the week digging sugar beets in field K has been the principal activity at the station. The yields are satisfactory and the sugar content is especially good, averaging better than 17 percent. The same is true in general of beets throughout the valley. This year more beets and fewer potatoes would have resulted in greater farm prosperity.

A carload of table stock potatoes, sold to the Nebraska Potato Association at 40 cents a cwt., was loaded Saturday.

Beans from the rotations in field E and from rotation 121 have been threshed, and the yields are as follows:

Rotation No.	Pounds per Plot	Bushels per acre
11	236	15.7
12	220	14.7
49	342	22.8
	Average	17.7
121	414	27.6

Disease damage to beans in the valley has been light, and some good yields have been reported. Beans are selling for \$2.60 a cwt.

An analysis of beets during the first day's run showed a sugar content of less than 16 percent, but a series of tests taken some days later showed an average of 18.7 percent sugar.

A sugar beet that measured 54 inches in length was displayed at the newspaper office in Scottsbluff this week.

During the week ending October 26 the average maximum temperature was 49, with a maximum of 73; the average minimum was 25, with a minimum of 12°. The daily average wind movement was 6.3 miles an hour. There was 0.04 inch of precipitation. The first light snow of the season in this area occurred on October 21.

The harvesting of sugar beets on the rotation plots was completed October 26. About one acre remains to be dug on the Walker place. Approximately 80 percent of the beets have been delivered to the factory.

The fall weather has been very favorable for harvesting operations, and there have been no delays resulting from inclement weather. In the valley the potato harvest has been completed.

Meetings of potato growers have been held this week at Scottsbluff and at Denver for the purpose of formulating and inaugurating plans to increase the present price of potatoes and to consider the control program of the A.A.A.

Scotts Bluff (cont'd)

Serious wind erosion damage occurs regularly in Hope Valley east of Lake Minatare where the soil is light and sandy. To stimulate an interest in planting trees there a tree-planting contest was sponsored by various organizations with the result that several thousand trees were planted and in many cases well cared for. During the week the trees were judged and prizes awarded. Keen interest was shown in the contest, and it is likely that a larger program will be carried on next year.

Mr. L. E. Gunderson, Finance Secretary, and Mr. Charles Hoff, Auditor, of the University of Nebraska, visited the station early this week.

Prof. M. D. Weldon, who has been here for a month taking soil and crop samples from the rotations for nitrate and phosphate analyses, finished his work Friday and returned to his duties at the university.

Prof. Mitrofan Afanasiev, Pathologist at the University of Nebraska, arrived here Friday to continue his studies of the effect of different rotations on diseases of potatoes. These studies have been carried on for four years. This year preliminary studies indicate that Fusarium Wilt infection is serious but scab is light.

Lionel Harris.

Umatilla

Weather conditions during the week ending October 12:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
80	35	58.6	0.01	2.4

Weather conditions during the week ending October 19:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
77	35	55.6	0.40	3.2

Weather conditions during the week ending October 26:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
65	22	44.6	Trace	2.9

Work during the last three weeks consisted of regrading in the orchard, harvesting squash and root crops, rebuilding cow corral and bull pen, and seeding cover crops on the cultivated land.

H. K. Dean.

## M I S C E L L A N E O U S

"Finishing Turkeys For Market", by H. K. Dean and H. E. Cosby, has been issued in mimeographed form as Circular of Information No. 124 of the Oregon Agricultural Experiment Station.

Mr. S. H. Hastings returned to Washington on November 4 from a field trip to the Southwest.



## W E E K L Y R E P O R T S

Of The Division Of  
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 United States Department of Agriculture

(Not for publication without the prior consent of this Division.)

Vol. XXXVII

November 2 and 9, 1935

No. 2

Huntley

During the two-week period ending November 2 the maximum temperature was 77 and the minimum  $-4^{\circ}$ . There was 0.08 inch of precipitation.

The harvest of sugar beets is nearing completion on the project, but it was interrupted during the week by snow and severe freezing. The yield of beets is reported to be less than 11 tons per acre due to damage from "curly top."

The final payment of 64 cents per ton was made on the 1934 sugar beet crop. This makes a total of \$5.40 for the crop exclusive of benefits received under the A.A.A.

Station work during this period included plowing, husking corn, and graveling station roads.

Current local prices of farm products: Alfalfa hay, \$12 a ton; potatoes, 75 cents a cwt.; beans, \$2.10 a cwt.; butterfat, 27 cents a pound.

Director F. B. Linfield, of the Montana Agricultural Experiment Station, visited the Huntley Station on October 23.

Dan Hansen.

Newlands

During the two-week period ending November 2 the average maximum temperature was 54.9, with a maximum of 74; the average minimum was 21.5, with a minimum of  $13^{\circ}$ . The mean temperature was  $38.2^{\circ}$ . The wind velocity averaged 2.18 miles per hour. There was 0.98 of an inch of precipitation.

The temperature of  $13^{\circ}$  at this station on October 23 equaled the lowest ever recorded in October. Only one other time during the 30 years that weather data have been kept at this station has there been a minimum temperature of  $13^{\circ}$  during October. This was in October 1919. The temperatures rose the latter part of October. This warm weather preceded a snowfall of 8 inches on November 1 and 2. Clearing skies on the night of November 2 brought zero temperatures. The minimum low for the month of November is  $1^{\circ}$  below zero. This likewise occurred during 1919.

Until this snowstorm occurred the station force was engaged in leveling land, fall plowing, and manuring field plots. At present the frozen ground prevents continuance of leveling operations or plowing, but hauling manure will be continued. Cleaning seed grain, repairing harness, cleaning buildings, and some shop work will be the routine until warmer weather again appears.

The prices being paid locally for farm products have not changed much since the last report. Some hay is being sold as feeder cattle arrive for winter feeding. The present cold weather should greatly increase feeding operations. Sheep and cattle from the ranges will be in need of feed and winter quarters.

E. W. Knight.

Prosser

Temperatures during the week ending November 2: Maximum 68, mean maximum 41.4, minimum 11, mean minimum 23.3, and the greatest daily range 38°. The mean hourly wind velocity was 2.83 miles.

The lowest minimum temperature in October on record was experienced in the Yakima Valley during the week. Temperature at the station dropped to 11° above zero, 9° at Yakima, and 1° at Selah, a short distance north of Yakima. The damage to the apple and potato crop was heavy. In the ground at the station were about 1700 bushels of potatoes, which will be almost a total loss. The loss of potatoes in the Yakima and Ellensburg districts will amount to approximately 666,000 bushels. Five hundred car-loads of apples were frozen on the trees and in the orchards in the Yakima Valley. The apple loss in the Okanogan and Wenatchee Valleys has been estimated at over \$1,000,000.

During the week the harvest of corn was completed on the rotations and the shelling of corn was started.

Potato digging on farm fields was continued the first part of the week, but cold weather halted operations.

As the damage to the potato crop by the cold weather became apparent, prices jumped from \$13 to \$24 per ton, f.o.b. car.

Weather conditions during the week ending November 9: Maximum 56, mean maximum 47, minimum 5, mean minimum 21.7, and the greatest daily range 33°. The mean hourly wind velocity was 1.98 miles.

Work during the week included the digging of sugar beets. One-third of the sugar beet plots in the rotations were harvested during the week.

Potatoes dug at the end of the week at the station showed 85 to 90 percent damage from the cold weather.

The price of No. 1 potatoes increased about \$10 per ton and are now \$33 to \$35 per ton in sacks, f.o.b. car. No. 1 onions are \$20 to \$25 per ton in sacks. Butterfat increased  $3\frac{1}{2}$  cents and is now 33 cents per pound.

Carl A. Larson.

Scotts Bluff

During the week ending November 2 the average maximum temperature was 52, with a maximum of 71; the average minimum was 20, with a minimum of 7°. The wind movement averaged 8 miles an hour. There was 0.05 inch of precipitation.

Station activities consisted of hauling hay from the University pasture, hauling manure from station dairy yards, and husking corn. The hay hauled from the University pasture was cut in September. There was a good growth of grass this year in the pasture, especially in certain places where it was cut for hay.

Mr. E. C. Scheidenhelm, of the Dairy Extension Division, visited the station on October 30.

Summary of the Yields of Potatoes from the Rotation Plots  
in Field K - 1935

	Bushels per Acre	Rotation No.
Maximum	368.7	64
Minimum	43.2	4
Average	222.0	--

Scotts Bluff (cont'd)

During the week ending November 9 the average maximum temperature was 40, with a maximum of 60; the average minimum was 20, with a minimum of 6°. The daily average wind movement was 8.0 miles an hour. There was 0.02 inch of precipitation.

Station activities during the week, in addition to the regular routine, consisted of husking corn and hauling sugar beet tops from the rotation plots.

The price of U. S. No. 1 potatoes is now 80 cents to 90 cents a cwt whereas a week ago it was just one half that much. The reason is ascribed to field frost damage in important northern producing sections.

The shipment of nearly 50 carloads of potatoes daily from now until the end of the potato marketing season, about May 1, will be necessary if all the 1935 potato crop of the North Platte Valley is disposed of in this way. An increase of from 2 to 8 cents per cwt. in railway freight rates on potato shipments becomes effective November 5.

At the present time over 100,000 sheep are being fed in the Mitchell territory on the Burlington Railroad. This is the largest number ever fed in this locality.

Mr. D. J. Roach, Nebraska Manager of the Great Western Sugar Company, reports that approximately 96 percent of the sugar beets in western Nebraska have already been harvested.

Lionel Harris.

Yuma

During the two-week period ending November 2 the maximum temperature was 90, mean maximum 82.5, minimum 37, mean minimum 45, and the mean 63.7°.

Cool northerly winds with very low humidity have made weather conditions favorable for picking cotton and harvesting grain sorghums. The six gins operating on the project report to date a total of 7,900 bales ginned during the season. This figure compares with 6,770 bales ginned during the corresponding period last year. Approximately 60 percent of the 1935 crop is picked. The yield per acre will be reduced as a result of stainer damage to the middle crop.

Lettuce, carrots, and winter garden peas have been planted in various sections of the project. Shipments from early plantings of peas have been made from the Somerton district.

Alfalfa seed prices have remained steady at about 12 cents per pound. Some late cuttings of alfalfa hay are being made, but no excess will be available for shipment.

The discharge of the Colorado River at Grand Canyon for October was 385,000 acre-feet. During October last year it was 170,000 acre-feet. For diversion purposes below Boulder Dam the discharge during October 1935 was 578,000 acre-feet. The approximate storage in the Boulder Reservoir is 4,070,000 acre-feet.

Station work during the last two weeks has included picking cotton, harvesting grain sorghums, planting winter legumes, plowing alfalfa plots for winter grains, leveling fallow plots, general hoeing and irrigating.

Mr. S. H. Hastings visited the station October 20 to 23.

E. G. Noble.



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 Vol. XXXVII

November 16 and 23, 1935

No. 23

Belle Fourche

During the week ending November 2\* the maximum temperature was 78 and the minimum -2°. The precipitation was 0.40 inch. The precipitation for October, 0.36 inch, was 0.88 inch less than the 27-year average for the month. A total of only 1.91 inches were received from July to October, inclusive, which is 0.85 inch less than the previous lowest on record for the four months.

When the cold weather set in 25 to 30 percent of the sugar beets in this territory were still in the ground. About 6 inches of snow fell during the week. With this snow and the cold weather no harvesting of beets was possible. The large acreage of beets not harvested was due to the fact that the Sugar Company restricted delivery of beets at their dumps.

Work on the station during the week consisted of leveling land, hauling manure, and plowing.

Beyer Aune.

Huntley

During the two-week period ending November 23 the maximum temperature was 54 and the minimum temperature -14°. The precipitation was 0.40 inch.

The harvest of sugar beets on the Huntley project was completed November 15. The acreage of beets on the project was about one fifth that of former seasons and amounted to about 1,000 acres. In the entire Billings factory district about 11,000 acres of beets were grown as compared to the former acreage of nearly 30,000 acres. The low acreage was due to the failure of growers and the Great Western Sugar Company to reach a satisfactory agreement last spring on the contract price for the crop. The average yield of beets on the Huntley project is reported to be only slightly more than 10 tons per acre. The low yield was due to late planting and damage from grasshoppers and the curly-top disease.

Due to the short hay crop and the shortage of beet by-products there is very little feeding of cattle or sheep on the project this winter. Alfalfa hay is selling at \$11 to \$12 per ton and feed grains at \$1.50 per cwt.

Station work during this period included plowing, husking corn, and graveling station roads and yards.

Summary of Yields of Sugar Beets  
in the Irrigated Rotations, 1935

	Bushels per Acre	Rotation No.
Maximum .....	16.57	21
Minimum .....	1.38	60
Average .....	8.78	--

\*This report was inadvertently omitted from the November 2 and 9 issue.

Huntley (cont'd)Summary of Yields of Potatoes  
in the Irrigated Rotations, 1935

	Bushels per Acre	Percent Marketable	Rotation No.
Maximum .....	372.0	90	61
Minimum .....	70.0	43	27
Average .....	211.6	76	--

Dan Hansen.

Newlands

During the two-week period ending November 16 the average maximum temperature was 43.8, with a maximum of 61; the average minimum was 14.5, with a minimum of 0. The mean temperature was 29.2°. The average wind velocity was 1.37 miles per hour. There was 0.14 of an inch of precipitation.

The zero temperatures on November 3 and 4 were the coldest November temperatures recorded since November 1919. The absolute minimum temperature at this station during the month of November occurred in 1906 when a low of 1° below zero was recorded. The low temperatures on November 3 and 4 followed a snowstorm on November 1 and 2, during which 8 inches of snow fell. This was the heaviest snowstorm that has occurred in this section for years. Other deep snows were as follows: In March 1925, 7 inches; in January 1916, 7 inches; and in January 1910, 8 inches.

Market prices: Butterfat, 32 cents a pound; eggs, 35 cents a dozen; beef, 6½ cents a pound; pork, 9 cents a pound; and hay, \$6 a ton in the stack.

Work at the station has consisted of leveling land, manuring plots, repairing buildings, and cleaning premises.

The yields of barley this year from plots Y-19 to 23, inclusive, of the Y series indicate that progress is being made in reclaiming these plots as their productivity is increasing. The plots treated with manure seem to respond better than the plots that were treated with gypsum.

E. W. Knight.

Prosser

Temperatures during the week ending November 16: Maximum 55, mean maximum 48.4, minimum 22, mean minimum 30.7, and the greatest daily range 24°. The mean hourly wind velocity was 1.51 miles. The rainfall amounted to 0.17 of an inch.

Harvesting of sugar beets on the crop rotation plots was completed at the end of the week.

Sorting and grading potatoes has been in progress most of the week. The larger part of the station potato crop has been sold at \$30 per ton for No. 1 and \$20 a ton for No. 2, sacks furnished, and potatoes graded.

Temperatures during the week ending November 23: Maximum 47, mean maximum 38.8, minimum 22, mean minimum 27.8, and the greatest daily range 25°. The mean hourly wind velocity was 0.58 mile. Precipitation (snow) was 0.21 of an inch.

Work on a W.P.A. road repair project on the station was started

Prosser (cont'd)

November 19 with seven men, but this number was increased to 14 at the end of the week.

The Station laboratory has been enlarged to twice its previous size by removing a wall partition.

Market prices: No. 1 alfalfa hay in the stack, \$7.50 per ton; No. 1 potatoes, \$28 to \$30 per ton, f.o.b. car; onions, \$25 to \$30 per ton.

Carl A. Larson.

Scotts Bluff

The average maximum temperature during the week ending November 16 was 36, with a maximum of 52; the average minimum was 12, with a minimum of  $-2^{\circ}$ . The daily average wind movement was 6.9 miles an hour. There was 0.11 inch of precipitation (snow).

Station activities during the week consisted of husking corn, piling and hauling beet tops, and moving machinery into the machine shed.

The station horses have been turned on the Walker place to graze on miscellaneous feed available there and on the fourth growth of alfalfa, which was 6 inches high before the frost killed it. As a protection against winter-killing, the fourth crop of alfalfa was not cut.

Sugar beets delivered by the station this year averaged 18.1 percent sugar and brought an initial payment of \$4.92 per ton.

The western Nebraska potato crop is turning out somewhat better than was previously expected, a report by the State and Federal division of agriculture statistics shows. Low temperatures caused some damage to potatoes stored in temporary pits, however.

During the week ending November 23 the average maximum temperature was 46, with a maximum of 52; the average minimum was 23, with a minimum of  $21^{\circ}$ . The average daily wind movement was 7.6 miles an hour. There was 0.01 inch of precipitation.

Station activities included husking corn on the plots in field K, sorting onions from the variety test, and plowing a strip of ground south of the garden for a winter planting test of vegetable seeds.

Meetings of the Western Nebraska Organized Agriculture were held during the week at Alliance, Rushville, Gering, Kimball, and Chappell. A wealth of information on agricultural problems was given out, and was received enthusiastically by a good attendance of farmers and their wives.

Western Nebraska factories of the Great Western Sugar Company will probably end the 1935 sugar slicing campaign early next week, according to an announcement by D. J. Roach, Manager of the Nebraska district of the company.

Potatoes are selling for 70 and 75 cents per bushel, butterfat for 36 cents a pound, and eggs for 35 cents a dozen.

Lionel Harris.

Umatilla

Report for the three-week period ending November 16:

Week Ending	Temperatures			Precipitation inch	Mean wind velocity, miles per hr
	Maximum	Minimum	Mean		
November 2	76	3	33.1	0	3.6
November 9	60	6	36.5	0	4.0
November 16	54	17	40.0	0.20	2.1

During the period of this report cover crops of rye, rye and vetch, and rye and Austrian winter peas were planted on all of the plowed land and in the variety test orchard. Different rates of seeding were made in each instance to obtain information on the maximum yield.

Some time was spent in rebuilding the calf pen and dry-lot corrals. Manure was applied to the pyrethrum plantings and to all plowed land.

At the request of the Dairy Department at Corvallis, samples of hay were obtained for analysis by the Department of Agricultural Chemistry in an effort to locate a high-protein lot for use in comparison with Willamette Valley alfalfa. A carload of the extremely high 16.32 percent protein hay has been ordered.

On November 16 194 turkeys were killed for shipment with the first pool of the Eastern Oregon Turkey Growers' Association.

H. K. Dean.

#### M I S C E L L A N E O U S

Mr. Carl B. Aylor has been appointed Head Clerk of the Division of Western Irrigation Agriculture to fill the position left vacant by the death of Mr. Robert L. Harden. Mr. Aylor has been employed in the Department of Agriculture since May 1924 and was transferred to this Division from the Office of the Secretary, effective December 1, 1935.

Mr. Donald W. Blackburn has been appointed Clerk of the Huntley Field Station, Huntley, Montana, to fill the position left vacant by the resignation of Norman E. Lambert. Mr. Blackburn started work at Huntley on November 18, 1935. He had been employed for about one year previous to that date as Foreman at the Scotts Bluff Field Station, Mitchell, Nebraska.

## W E E K L Y R E P O R T S

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Vol. XXXVII

November 30, 1935

No. 24

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Belle Fourche

During the week ending November 30 the maximum temperature was 61° and the minimum 19°. There was a trace of precipitation.

Weather conditions were favorable during the last half of November. All sugar beets had been harvested and delivered to the dump by the end of the month. The average yield for the Black Hills district was about 10 tons per acre from about 11,000 acres. The average percent of sugar was 17.75. An initial payment of \$4.60 per ton was made by the factory for the 1935 crop.

This year over 100,000 lambs are being fed in the Belle Fourche district. The price paid for these lambs ranged from 6 cents to 7½ cents a pound. Some of these lambs are being shipped to market. At the present price of fat lambs the feeders will make a good profit on their operations.

Early in the season alfalfa hay sold at \$5 a ton in the stack, but at this time it is \$6 a ton. Local barley now sells at \$1 a hundred, and corn shipped in at \$1.20 a hundred pounds.

Work on the station has included leveling land in fields W and P, plowing, and caring for livestock.

Beyer Aune.

Huntley

During the week ending November 30 the maximum temperature was 60 and the minimum 22°. There was no precipitation.

Weather conditions were favorable for field work, and more than the usual amount of fall plowing is being done in the valley.

Open weather and a lack of feeding operations have lowered the price of feeds locally. Alfalfa hay is now selling at \$10 a ton in the stack.

Station work included husking corn and plowing.

Summary of Alfalfa Yields in 1935

	Tons per acre		
	First	Second	Third
	cutting	cutting	cutting
Maximum	2.14	1.74	1.90
Minimum	.30	.22	.24
Average	.99	1.01	.95

Dan Hansen.

Newlands

During the two-week period ending November 30 the average maximum temperature was 49.9, with a maximum of 56; the average minimum was 21.8, with a minimum of 15°. The mean temperature was 35.9°. The average wind velocity was 0.86 mile an hour. There was 0.06 of an inch of precipitation.

The daily minimum temperatures ranging around 15° have slowed up the leveling operations. It is necessary to wait until late forenoon before the soil thaws enough for the work to continue. However, progress is being made in the final finishing work with tractor and scraper. Some plowing is being done at the station as well as hauling manure and cleaning the fields of weeds.

The Nevada Agricultural Experiment Station is at present having an additional bull pen built for another bull that is being shipped from the Huntley Field Station. This animal is expected to arrive this week. Some further sterility troubles have developed in the milking herd. Dr. Records and staff, of the Veterinary Department of the University of Nevada, are going to try to determine the trouble.

The turkey experiment will soon be completed. It is expected that the turkeys will be killed about December 14, when the effect of the various feeds on growth and bone formation will be determined. At present the results indicate average gains at average costs, leaving a fair margin of profit. High protein feeds having a high percentage of ash cause the same trouble as in previous years: crooked breast bones and slipped tendons. The toms seem to be more susceptible than the hens to this deformity.

The turkeys in the Thanksgiving pool have been marketed with gratifying results to local farmers. Final payments have not been made, but a price of about 25 or 26 cents a pound is expected. The quality of the turkeys shipped was high: the greater percentage graded as primes.

About 400 men in two C.C.C. camps are at present engaged in building needed irrigation structures, cleaning canals, etc. for the local irrigation district. It is expected that a great deal of worth while work will be accomplished.

E. W. Knight.

Prosser

Climatic conditions (temperatures) during the week ending November 30 were as follows: Maximum 50, mean maximum 37.3, minimum 28, mean minimum 30.7, and the greatest daily range 17°. The mean hourly wind velocity was 1.02 miles. The precipitation amounted to 0.02 of an inch. The weather was foggy most of the week.

The average yield of corn from the rotation plots was 62.3 bushels per acre.

The W.P.A. workers have graded the road on the west side of the rotation plots and have constructed a new drainage ditch.

Carl A. Larson.

Scotts Bluff

During the week ending November 30 the average maximum temperature was 47, with a maximum of 55; the average minimum was 25, with a minimum of 18°. The daily wind movement averaged 11.1 miles an hour. There was no precipitation. The average precipitation for November from 1910 to 1934 was 0.32 inch. The precipitation for November 1935 was 0.14 inch.

Scotts Bluff (cont'd)

The first planting of a winter test of vegetable seeds was made on November 25. Climatic conditions permitting, plantings will be made each month up to and including April 1936. Crops included in this test are onions, carrots, parsnips, red beets, radishes, leaf lettuce, head lettuce, peas, and beans.

The sweet clover plots in field E that are to be seeded to sugar beets next spring have been plowed. The ground was so very dry and hard that the plow turned the soil up in large dry clods, but as it is it will not blow seriously.

Other station activities included hauling manure and cleaning up grounds.

Mr. A. E. Anderson, State and Federal Agricultural Statistician, says that Nebraska sugar beet growers can plant about 50 percent more acres of beets next year than they did this year.

Butterfat is selling for 36 cents a pound. Turkeys sold for 25 cents a pound on foot before Thanksgiving.

Summary of Sugar Beet Yields From  
Irrigated Rotations in Field K - 1935

	Tons per acre	Percent Sugar	Rotation No.
Maximum	18.79	17.3	21
Minimum	6.74	20.4	2
Average	13.42	19.0	--
<hr/>			

Summary of Corn Yields From  
Irrigated Rotations in Field K - 1935

	Bushels per Acre	Rotation No.
Maximum	67.4	62
Minimum	20.6	26
Average	34.8	--

Lionel Harris.

Umatilla

Climatic conditions during the week ending November 23:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
52	23	34.6	0.25	1.7

For the Thanksgiving market 195 turkeys were killed and delivered to the Eastern Oregon Turkey Growers' Association pool on November 18. Of these 94.9 percent graded prime and 5 percent graded choice.

Work during the week included clearing up the sweet clover stubble in the pastures and preparing the land for reseeding in the spring.

The land west of the station has been closely grazed by sheep during the past few winters, and following a grass fire last summer considerable soil was moved in the fall by the high winds. This condition threatened to cause considerable damage to the rotation field; so an area west of the station site was seeded to rye to retard soil movement.

Umatilla (cont'd)

Messrs. J. S. Burrier and S. A. Thompson, of the Rural Resettlement Administration, called to discuss phases of the proposed resettlement program on vacant irrigated lands of the adjoining projects.

Weather conditions during the week ending November 30:

Temperatures			Precipitation,	Mean wind velocity,
Maximum	Minimum	Mean	inch	miles per hour
54	28	36.7	0.07	2.2

Thin places in the pasture plots were reseeded. Through the Oregon Agricultural Experiment Station seed of 13 native western grasses was received for seed production trials. Two sets of plantings in rows and one in broadcast blocks were seeded for these experiments. Ten-foot blocks of each were planted south of the rotation field to test their adaptability to use as desert range grasses.

H. K. Dean.

## W E E K L Y R E P O R T S

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Vol. XXXVII

December 7 and 14, 1935

No. 25

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Belle Fourche

During the week ending December 14 the maximum temperature was 51 and the minimum 9°. The precipitation was 0.31 inch.

The precipitation came in the form of snow, which was about 4 inches deep here at the station. To the west around Spearfish and the Bear Lodge district over 12 inches of snow was recorded. The prospects now are very good for an ample supply of water during the coming irrigation season.

Work during the week included hauling hay and caring for the livestock.

The 1935 sugar beet crop was the best that has been produced here for several years, particularly as to sugar content. The average percent of sugar for the factory run was 17.75, and the average yield was about 10 tons per acre.

The initial payment this year by the factory was \$4.60 per ton. Including the processing tax, a total of \$794,580 has been paid to the farmers in the district. The slicing of beets will be finished December 16, when the factory will close for the season.

Beyer Aune.

Huntley

During the two-week period ending December 14 the maximum temperature was 52 and the minimum 9°. There was 0.14 inch of precipitation.

The weather continued open and mild during this period, and conditions are excellent for livestock both on the range and in the feed lots. Prices of feed have declined still further, and hay is selling at \$8 to \$10 a ton.

The prospect of obtaining an electric power line for the Huntley project and the Billings Bench area under the Government Rural Electrification plan appears to be very good. A preliminary survey of the area was made during the past season, and at the present time the prospective users of electric current are signing contracts.

Station work during this period included leveling land in field 0 and the routine of caring for the livestock.

Dan Hansen.

Newlands

During the two-week period ending December 14 the average maximum temperature was 48.3, with a maximum of 58; the average minimum was 22, with a minimum of 11°. The mean temperature was 35.2°. The wind velocity averaged 1.61 miles an hour. There was 0.24 of an inch of precipitation.

Newlands (cont'd)

During this period field work has been continued. However, the time is fast approaching when the ground will be frozen to a depth of 8 or 9 inches, making it impossible to plow or pursue leveling operations. All fall plowing and work of a similar nature has been finished, but some leveling is still to be done.

Two cooperative livestock experiments conducted by the Nevada Agricultural Experiment Station have been finished. The hog-feeding experiment demonstrated that tankage or meat scrap is not a valuable addition in pig rations using skim milk and alfalfa hay as a supplement to barley.

The turkeys from the turkey-feeding experiment have just been killed and delivered to the cooperative pool. The indications are that the economy of gains is about equal as between the toms and the hens. However, the hens finish, as a rule, earlier than most of the toms. Turkeys kept after they have been matured and fattened are fed at a loss to the grower. Also those that are fed high protein rations containing a high ash content develop a greater number of crooked breasts and slipped tendons than those receiving the same percentage of protein of a low ash content. In other words, the protein food used should not consist of too large a proportion of animal proteins, such as meat scraps or fish meal. Protein food from vegetable sources does not affect the bone structure. These results tend to show that cull turkeys when fed separately do not produce as economical gains as other normal healthy turkeys and they do not finish out as well. Additional data are available on the economy of feed mixtures.

Recently the Nevada Agricultural Experiment Station issued a bulletin entitled "The Economies of Feeding Alfalfa Hay and Grain to Holstein Cows" by F. B. Headley. The data in this bulletin were summarized from the results of ten years of experiments with dairy cows conducted at this station by the State in cooperation with this Division.

Prices the growers received for the turkeys sold in the Thanksgiving pool were as follows:

Prime young hens .....	27 $\frac{1}{2}$	cents per pound
Prime young toms .....	26 $\frac{1}{2}$	" " "
Choice young hens .....	25 $\frac{1}{2}$	" " "
Choice young toms .....	24 $\frac{1}{2}$	" " "
Commercial hens and toms ..	22	" " "

It is interesting to note that 90 percent of the Nevada Association turkeys graded prime, 9.6 percent graded choice, and 0.4 percent graded commercial on Government standards.

E. W. Knight.

Prosser

Climatic conditions during the two-week period ending December 14: Maximum temperature 51, mean maximum 38.8, minimum 24, mean minimum 28.3, and the greatest daily range 27°. The mean hourly wind velocity was 0.91 mile. The precipitation amounted to 0.33 of an inch.

The annual meeting of the Washington State Horticultural Association was held in Wenatchee from December 9-11, inclusive. The discussions of the association this year centered around production problems, whereas during the last three years the discussions were primarily financial. The effect of lead arsenate on the soil and its subsequent effect on new seedings of legumes for cover crops was one of the timely problems discussed.

Prosser (cont'd)

The Washington Irrigation Institute meeting was held in Wenatchee December 12-13. At this meeting problems of irrigation districts were discussed.

The W.P.A. laborers have dug out all the locust stumps on the west side of the station and filled up the unlined irrigation ditch along which the locust trees were growing. Some locust trees have been removed to make fence posts.

Market prices paid growers for produce f.o.b. car: Alfalfa hay in the stack, \$7.50 per ton; No. 1 potatoes in sacks, \$25 per ton; onions, in sacks, \$19 per ton; barley and oats, \$21 per ton; hops, baled,  $12\frac{1}{2}$  cents per pound; eggs, 25 cents per dozen; and butterfat,  $37\frac{1}{2}$  cents per pound.

Carl A. Larsen.

Scotts Bluff

During the week ending December 7 the average maximum temperature was 42, with a maximum of 50; the average minimum was 13, with a minimum of 7°. The daily average wind movement was 5.7 miles an hour. There was no precipitation.

Station activities during the week consisted of hauling manure, plowing, and repairing machinery.

One of the pure-bred heifers belonging to the station was found in the University pasture afflicted with paralysis. She was hauled down to the station, where she dropped her calf and is recuperating slowly. The other dry stock are still grazing in that pasture where feed is plenteous.

Mr. A. E. Anderson, State and Federal Agricultural Statistician, stated that Nebraska's seed corn situation is serious; that little, if any, of the new corn would be good for seed due to excessive moisture and early fall frosts.

This fall 465,000 lambs have been placed on feed lots in the North Platte Valley of western Nebraska and eastern Wyoming as compared to 435,000 the previous season. Up to December 6 66 carloads had been marketed.

During the week ending December 14 the average maximum temperature was 43, with a maximum of 50; the average minimum was 20, with a minimum of 11. The daily wind movement averaged 9.7 miles an hour. There was 0.03 of an inch of precipitation.

Several plots in field K that are to be planted to sugar beets and oats next spring have been plowed. Manure was applied before plowing in the rotations requiring this treatment. Mild weather permitted plowing up to December 12 when the temperature dropped and froze the ground. The stubble plots, which were irrigated only once the past summer, were difficult to plow owing to very dry soil, but the plots which had been irrigated two or more times gave no trouble.

After a short period of very inefficient operation, during which the supply tanks went dry, the windmill pumps at the station are now working satisfactorily. It was necessary to pull these pumps and replace the old gaskets in the cylinders with new ones. In the east or old well there is now 5 feet of water; and in the west well, which was dug a few years ago, there is 16 feet of water.

Scotts Bluff (cont'd)

Four Duroc Jersey sows farrowed 26 pigs during the week. Both the sows and their offspring are doing well at this time.

Meetings of the Nebraska Irrigation Association were held December 8 and 9 in Scottsbluff. Notable speakers on the program included Governor R. L. Cochran, W. H. Brokaw, H. J. Gramlich, Paul Good, T. W. Parry, W. H. Dahlberg, D. J. Roach, and W. H. Wright.

Mr. H. V. Anderson, Manager of the North Platte Valley Cooperative Poultry Marketing Association, reports that the turkeys in the Christmas shipments are the "best ever raised." More than 23,000 turkeys will leave the valley this week for eastern markets. The final shipment will be about January 20 and will total approximately six carloads. The tom turkeys average about 16 pounds in weight and the hens about 11 pounds.

Since 1930 the corn crop in Nebraska has decreased over 200 million bushels. The number of horses in this State decreased 96,645 or 12.9 percent, and the number of mules 23,373 or 23.8 percent. These figures are from a recent census report of the U. S. Department of Commerce.

Scotts Bluff County leads the State in potato and sugar beet production. The potato acreage in the county increased from 10,654 acres to 17,960 acres from 1929 to 1934, and production increased from 1,625,603 bushels to 2,315,622 bushels. County sugar beet acreage decreased from 50,796 acres to 37,903 acres, and production from 621,858 tons to 379,126 tons during the five-year period. From 1929 to 1934 the number of cattle nearly doubled, increasing from 8,467 to 14,959.

Lionel Harris.

Umatilla

Climatic conditions during the two-week period ending December 14:

Week Ending	Temperatures			Precipitation inch	Mean wind velocity, miles per hr.
	Maximum	Minimum	Mean		
December 7	39	29	31.4	0.20	1.9
December 14	53	25	39.1	.41	3.3

Work during this period included manuring the alfalfa varieties, building up washed borders, and spring-toothing alfalfa.

The area between the residences and the garage, formerly occupied by personal garden and miscellaneous crops, was graded and seeded for lawn. Following seeding straw and manure were applied to prevent soil blowing.

The Superintendent conferred with Messrs. McDonald, Bell, and Dewey, of the Resettlement Administration, in regard to soil, water supply, and economic conditions on the Stanfield and Westland projects. Some 2500 acres included in these projects have been listed for resettlement purposes.

A summary of the precipitation from September 1 to November 30 discloses a deficiency of 1.44 inches, making the precipitation for that period 39 percent of the 25-year average. Local conditions reflect quite closely those of eastern Oregon. Water supply prospects for next year appear extremely precarious. Water was not turned into the feed canal until considerably later than normal, and to date the largest head has

Umatilla (cont'd)

been less than one-third capacity. There has been practically no accumulation in the Cold Springs Reservoir. Reports from the Blue Mountains indicate that the little snow which has fallen this fall has already gone off.

During the week of December 9 the Superintendent attended the annual agricultural staff conference at Corvallis.

H. K. Dean.



## W E E K L Y R E P O R T S

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Newlands

During the two-week period ending December 28 the average maximum temperature was 41.9, with a maximum of 48; the average minimum was 10.5, with a minimum of  $5^{\circ}$ . The mean temperature was  $26.2^{\circ}$ . The wind velocity averaged 1.04 miles per hour. There was 0.15 of an inch of precipitation.

The weather continues fair with cold nights and temperatures during the day somewhat above freezing. Generally the ground thaws out sufficiently by midday to permit the continuance of leveling operations.

The dairy farmer is receiving 36 cents per pound for butterfat, the highest price that has been paid for that commodity in several years. This price, with hay at \$5.50 a ton, allows the dairyman a fair margin of profit over the cost of production.

Local farmers are being paid better prices for most of their farm products than they have received during recent years. This has been reflected by the amount of holiday trade at stores in Fallon. They report the best Christmas trade in recent years.

The work at the station has consisted of burning weeds, cleaning corrals, hauling manure, and leveling land.

E. W. Knight.

Prosser

Climatic conditions during the two-week period ending December 28: Maximum 46, mean maximum 30.2, minimum 22, and the mean minimum  $25.7^{\circ}$ . The precipitation (rain) amounted to 0.56 of an inch. The weather was cloudy and foggy most of the time during this period.

On December 20 75 steers and 45 calves were brought to the station to be fed on contract during the winter. The ration for the steers during the first part of the feeding period will be alfalfa hay and cull potatoes.

There was little change in the prices paid for farm commodities during this period.

Carl A. Larson.

Scotts Bluff

During the week ending December 21 the average maximum temperature was 34, with a maximum of 43; the average minimum was  $4^{\circ}$ , with a minimum of zero. The daily wind movement averaged 8.7 miles an hour. There was 0.01 inch of precipitation.

Station activities included hauling manure, cleaning yards, repairing yard fences, and cleaning and cementing floor in the basement of house

Scotts Bluff (cont'd)

occupied by Mr. Rogers.

On December 18 more than 200 lamb feeders attended a banquet and meeting at the Lincoln hotel. How the consumption of lamb can be increased was discussed by Messrs. R. C. Pollock and F. M. Simpson, of Chicago.

During the week ending December 28 the average maximum temperature was 33, with a maximum of 41; the average minimum was 12°, with a minimum of zero. The daily wind movement averaged 9.5 miles an hour. There was 0.01 inch of precipitation (snow).

Station activities consisted of bedding stock, repairing fences, and overhauling the wagon scales. The rusted and worn vital parts of the scales were replaced with new parts.

Although much feed is still available in the University pasture, the livestock was taken out early this week for two reasons: (1) To increase the manure supplies of the station; (2) to avoid the possible loss of animals in blizzards.

Mr. Beyer Aune visited the station on December 27.

According to a report issued by Mr. A. E. Anderson, State and Federal Agricultural Statistician, Nebraska's fall pig crop increased 84 percent over the drought year of 1934.

Lionel Harris.

## M I S C E L L A N E O U S

Mr. C. S. Scofield will leave Washington on January 8 for the Southwest. After making stops at El Paso, Texas, and at Yuma, Arizona, he expects to arrive about January 18 at Riverside, California, which will be his headquarters until about the middle of March.

A manuscript entitled "Subsoil Waters of Newlands (Nev.) U. S. Field Station", by Carl S. Scofield, C. Lloyd Moon, and Elmer W. Knight, was submitted on December 23 with a view to publication as a technical bulletin of the Department.

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